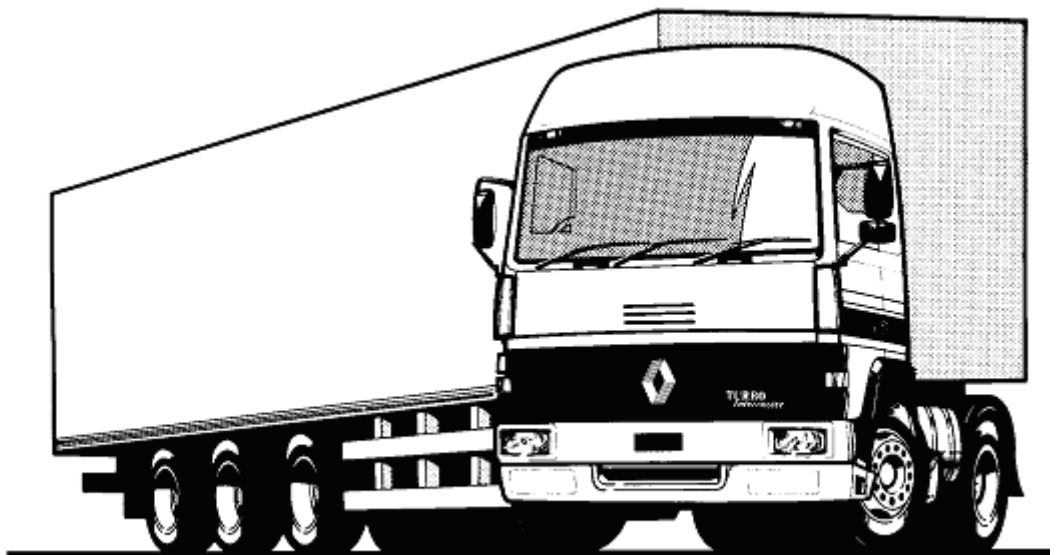

Quick Start Manual for

AutoTrack

30 August 2012

Savoy Computing Services Ltd



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No warranty is given as to the results or performance of this Software.

The User is responsible for satisfying himself that the Software is suitable for his purpose and performs in accordance with the claims in the User Manual.

It is assumed that the User is a competent practitioner who is experienced in the theories and techniques upon which the Software is based.

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30 August 2012

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Installing AutoTrack

Although installation of AutoTrack is relatively easy we nevertheless recommend that it be undertaken only by suitably competent persons.

AutoTrack hardware lock

AutoTrack is protected from illegal use by a hardware lock, a small device that must be plugged into either the parallel port or the USB port of your computer (or, in the case of network licences, file server). Without this device AutoTrack will not run.

Parallel hardware locks

The parallel port hardware lock may be connected at either end of a parallel printer cable but must be located between the computer and the printer (or plotter, T-switch, buffer etc.). Since the hardware lock will not affect the operation of the parallel port it can be left installed when AutoTrack is not in use.

Whenever possible printers or plotters that are plugged into the same parallel port as the AutoTrack hardware lock should be switched on before the program is used and left on throughout its use.

Up to four Savoy and third party hardware locks, as well as a printer, can be plugged into the same parallel port. However, users should note that whilst all Savoy program hardware locks are compatible with one another, third party hardware locks may cause problems. Such problems can usually be resolved by rearranging the order in which the hardware locks are chained or by plugging them in different ports.

USB hardware locks

USB hardware locks are becoming the norm with the gradual phasing out of the parallel port. There are fewer problems with USB dongles since they cannot be stacked.

Important

Replacement Savoy hardware locks will only be issued to holders of current support and maintenance contracts on return of a damaged hardware lock. If the damaged hardware lock cannot be produced a replacement copy of AutoTrack will have to be purchased.

Initialising AutoTrack

Before you can use the hardware lock for the first time you will need to initialise it by entering an **Initialisation Keycode**. This code is normally supplied to you once you have confirmed receipt of the software and dongle.

When you run AutoTrack for the first time it will warn you that the dongle has not yet been initialised and prompt you for an initialisation code. Once you have initialised your dongle you may discard the code which you will not need again.

Note

The Initialisation Keycode is different from an Update Keycode which can only be used on a dongle that has already been initialised.

Updating the AutoTrack version

Each time you install a new version of AutoTrack you will need to enter an **Update Keycode**. This code will normally be emailed to you automatically when you download the new version.

To enter the update keycode:-

1. Install the new version of AutoTrack and run it.
2. You will be warned that you are not authorised to use this version and prompted to enter an update code.
3. Follow the prompts and enter the supplied keycode.

The update code changes the authorised version held in the dongle so once you have successfully applied the code you will not need to enter it again, even if you move the dongle to another computer.

Note

The update code changes with every version and once successfully applied may be discarded.

Upgrading AutoTrack functionality

The AutoTrack modules that you are able to use are controlled by the hardware lock. Extra modules, if purchased, may be activated by entering an **Upgrade Keycode**. This code will be supplied by Savoy once we have your confirmed order for additional modules. However, before we can generate the code we need the **User Code** from your installation.

To locate the User Code:-

1. Run Start > Programs > AutoTrack > Hardware Lock Manager.
2. Click **Search for Savoy hardware locks** to locate your dongle.
3. Select the dongle and click **Details**.
4. The **User Code** is the second item down.

To enter the Upgrade Keycode:-

1. Run Start > Programs > AutoTrack > Hardware Lock Manager.
2. Click **Search for Savoy hardware locks** to locate your dongle.
3. Select the dongle and click **Update**.

4. Follow the prompts and enter the supplied keycode.

Licences

Depending upon your licence you may be able to run AutoTrack on more than one computer.

Single user licences

You may install the software on as many machines as you wish but will only be able to run it on computers running 32-bit or 64-bit Windows with an AutoTrack hardware lock plugged into the parallel or USB port.

Network licences

You may install the software on as many machines as you wish but will only be able to run it on computers running 32-bit or 64-bit Windows that have a network link to the server that has the hardware lock plugged into its parallel or USB port.

Trial copies

Trial copies of AutoTrack may be issued with a licence that has a limited life. Once the licence expires the protection system will prevent the program from operating.

To convert an evaluation copy to the full version or to extend the evaluation period, the software will need to be relicensed. Relicensing involves issuing a new hardware lock or authorisation code.

Demonstration copies

Demonstration copies do not require a hardware lock because they distort the vehicles randomly thereby rendering them useless for real work. You may install demo copies on as many computers as you wish.

Rental licences

Rental licences use a software licence which can be purchased and extended online. No physical lock is required but an internet connection is required. You may install AutoTrack on as many computers as you wish and the licence can be transferred between installations.

Installing the software

AutoTrack can be installed with either a single user hardware lock, which should be plugged into the computer being used, or with a network hardware lock which may be plugged into a computer remote from the one in use.

The software is available on CD or as either a Windows Installer (msi) file or a standalone self-extracting (exe) file.

The installer files have names of the form **ATRxxx.EXE** or **ATRxxx.MSI** where **xxx** is the version number, e.g. **ATR922.EXE**. Note that these files contain the full product and will install a full copy or update an existing copy.

The CD contains some additional utilities and has a navigation menu but otherwise the AutoTrack product is identical.

Note

*You can configure AutoTrack to warn you when updates become available. If you download these updates they are placed in the **My Documents\My AutoTrack Data\Updates** folder. If you obtain updates by visiting the web site we recommend that you place these files in the same area.*

Single user version

1. Switch on the computer.
2. **Do not plug the dongle in yet.** If you have already plugged it in then unplug it before proceeding.
3. Login to Windows making sure that you have **Administrator** rights and check that there is 600MB (max) free for the program files.
4. **If you have a CD**
Insert the AutoTrack CD and when it starts select **Install / Update / Remove AutoTrack**. When Setup starts follow the prompts to install AutoTrack, selecting the **Express** install option. See [Installing, modifying, repairing or removing AutoTrack from a CD or from a self-extracting installer \(exe\) file](#), later in this section, to perform a **Custom** install or for more details.

If you have a self-extracting (exe) file

Double click on the file. When Setup starts follow the prompts to install AutoTrack, selecting the **Express** install option. See [Installing, modifying, repairing or removing AutoTrack from a CD or from a self-extracting installer \(exe\) file](#), later in this section, to perform a **Custom** install or for more details.

If you have a Windows Installer (msi) file

Double click on the file. When Setup starts follow the prompts to install AutoTrack, selecting the **Typical** install option. See [Installing, modifying, repairing or removing AutoTrack from a Windows Installer \(msi\) file](#), later in this section to perform a **Custom** install or for more details.

5. Shut down the PC, plug in the dongle and restart the computer.

USB dongles only

If you plugged in the dongle before installing the software it probably will not be installed correctly. Refer to [Removing a partially installed USB dongle](#) to remove and reinstall it.

Parallel dongles only

If you have a printer connected on the same port, switch that on first, and then the computer. If you have other hardware locks connected on the same port you may need to experiment with the order.

6. If you opted to configure your system manually then carry out any manual configuration (see [Configuring AutoCAD manually](#) or [Configuring MicroStation, Bentley PowerDraft, PowerCivil, Power InRoads, Power GEOPAK or MX manually](#) later in this section).
7. Repeat for any other computers on which you want to be able to run AutoTrack.

Removing a partially installed USB dongle

1. Unplug the USB dongle.
2. Run the Hardware Lock Wizard and if there is a driver installed, click the **Uninstall Driver** button.
3. Rerun the Hardware Lock Wizard and click the **Install Driver** button.
4. Plug the USB dongle in.
5. Click **Search for Savoy Hardware Locks** to check that the dongle can be found.
6. Close the Hardware Lock Wizard.

Network version

Warning

The installation of the network version of AutoTrack should be carried out by a network administrator or system supervisor.

1. Decide which computer you will install the hardware lock on (the licence server) bearing in mind that this computer must be left switched on and possibly logged in at all times. We recommend that this is neither a file server nor an AutoTrack client and we do not recommend installing the network hardware lock on computers running Windows 98.
2. Login to Windows making sure that you have **Administrator** rights.
3. Install the NetHASP Licence Manager software (see [Installing the NetHASP Licence Manager software \(Network version only\)](#)).
4. **USB dongle**
Plug the hardware lock into the USB port.

Parallel dongle

Close down and switch off the computer. Plug the hardware lock into the parallel port and then restart it.

Note

If you have a printer connected then switch that on first and then the computer. If you have other hardware locks connected then you may need to experiment with the order.

5. The optional NetHASP Licence Monitor allows you to monitor licence usage and may be installed on any computer, including the server if you wish (see [Installing the NetHASP Licence Monitor software \(Network version only\)](#)).
6. Go to first of the computers on which you wish to install AutoTrack, login to Windows making sure that you have **Administrator** rights, and check that there is approximately 600MB (max) free on the installation drive for the program files.
7. **If you have a CD**
Insert the AutoTrack CD and when it starts select **Install / Update / Remove AutoTrack**. When Setup starts follow the prompts to install AutoTrack, selecting the **Express** install option. See [Installing, modifying, repairing or removing AutoTrack from a CD or from a self-extracting installer \(exe\) file](#), later in this section, to perform a **Custom** install or for more details.

If you have a self-extracting (exe) file

Double click on the file. When Setup starts follow the prompts to install AutoTrack, selecting the **Express** install option. See [Installing, modifying, repairing or removing AutoTrack from a CD or from a self-extracting installer \(exe\) file](#), later in this section, to perform a **Custom** install or for more details.

If you have a Windows Installer (msi) file

Double click on the file. When Setup starts follow the prompts to install AutoTrack, selecting the **Typical** install option. See [Installing, modifying, repairing or removing AutoTrack from a Windows Installer \(msi\) file](#), later in this section to perform a **Custom** install or for more details.

8. If you opted to configure your system manually then carry out any manual configuration (see [Configuring AutoCAD manually](#) or [Configuring MicroStation, Bentley PowerDraft, PowerCivil, Power InRoads, Power GEOPAK or MX manually](#)).
9. If you want to be able to monitor licence usage from this computer, install the NetHASP Licence Monitor (see [Installing the NetHASP Licence Monitor software \(Network version only\)](#)).
10. Repeat steps 6 to 11 for any other computers on which you want to be able to run AutoTrack.

Installing the NetHASP Licence Manager software (Network version only)

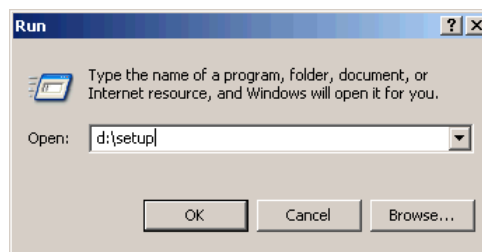
The network licence manager can be installed on a Windows NT/2000/XP/7 network or a Novell Netware network. We do not recommend that it be installed on a computer running Windows 98.

Warning

The installation of the hardware lock on a network server should be carried out by a network Administrator or system supervisor.

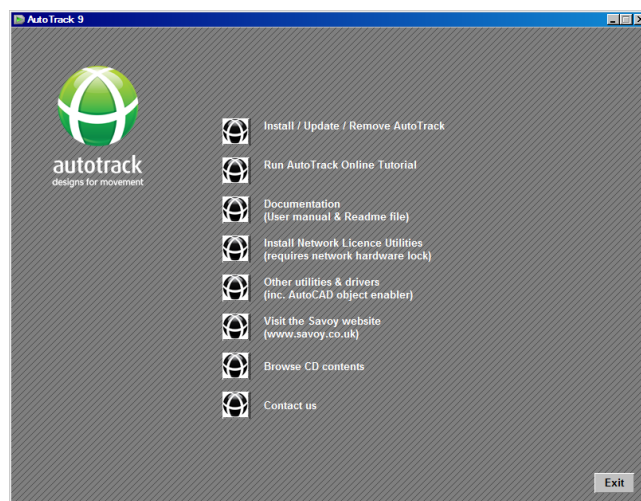
Installing the licence manager on a Windows NT/2000/XP/7 server

1. **Do not plug in the hardware lock** until you have installed the licence manager.
2. Insert the CD in the CD ROM drive. The CD will start automatically if autorun is enabled and you can proceed to step 5. If the CD does not start automatically then proceed as follows:-
3. Click the **Start** button and select Run. The Run dialog will appear.



Windows 2002 Run dialogue

4. Type **d:setup** (change the drive letter to suit your CD) and click on **OK**.
5. The CD browser will appear.



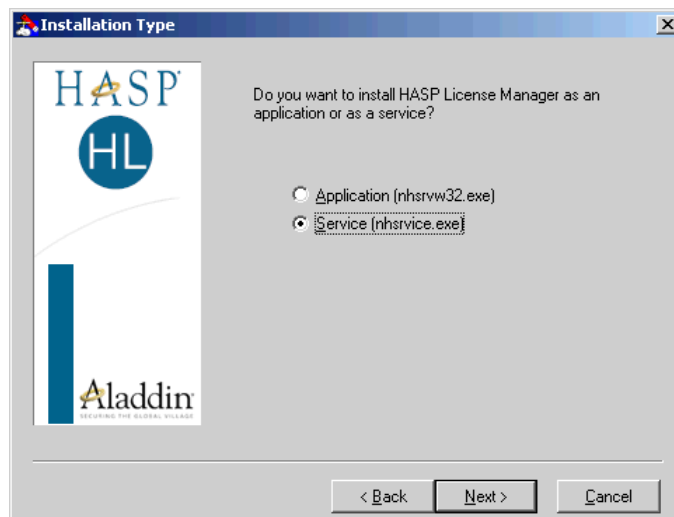
CD Browser

6. Click Install Network Utilities and then Install NetHASP Licence Manager on a Win32 computer.
7. The HASP Licence Manager Installation screen will appear.



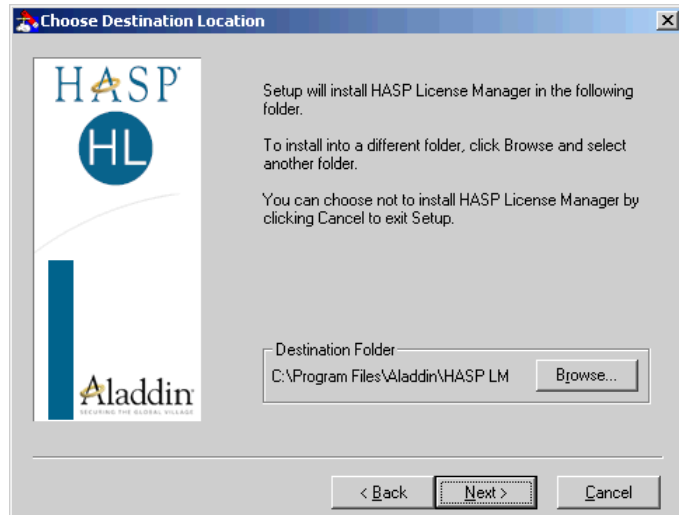
NetHASP Licence Manager Installation dialog

8. Click **Next**. Accept the Aladdin licence agreement. The Installation Type dialog will appear.



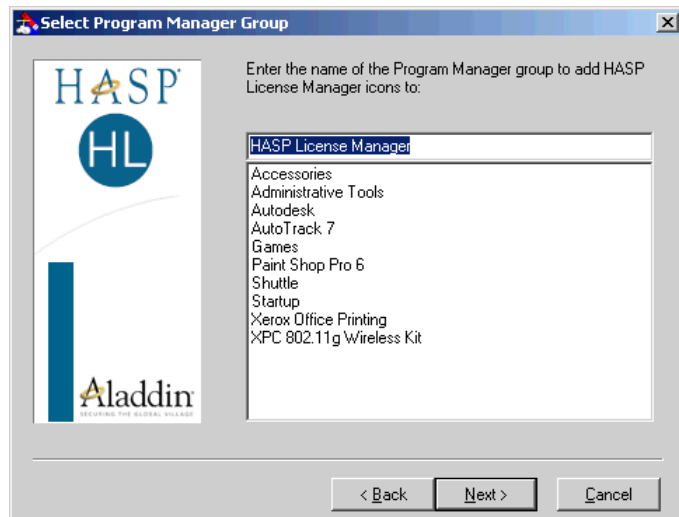
NetHASP Licence Manager Installation Type dialog

9. We recommend that you select the **Service** setup. This will install the Licence Manager as an NT service and mean there is no need to log in to the computer to use the Licence Manager. If your operating system does not allow you to install the Licence Manager as a service then select the **Application** setup.
10. Click **Next**. The Choose Destination Directory dialog will appear.



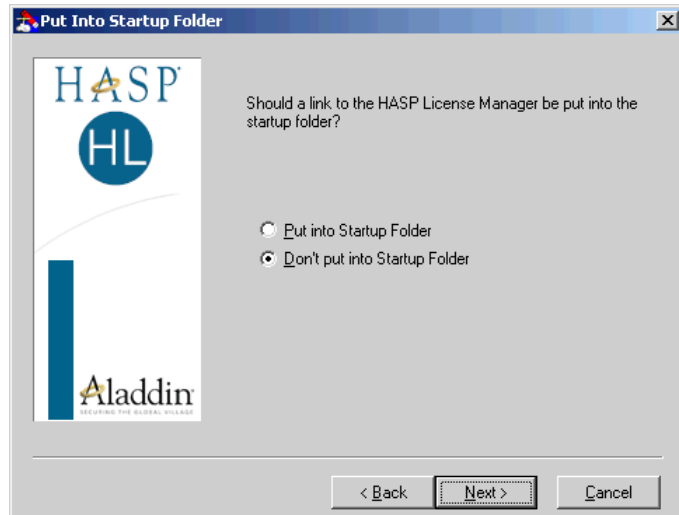
NetHASP Licence Manager Choose Destination Directory dialog

11. If you wish to change the default location then click **Browse** and select your preferred directory.
12. Click **Next**. The Select Program Manager Group dialog will appear.



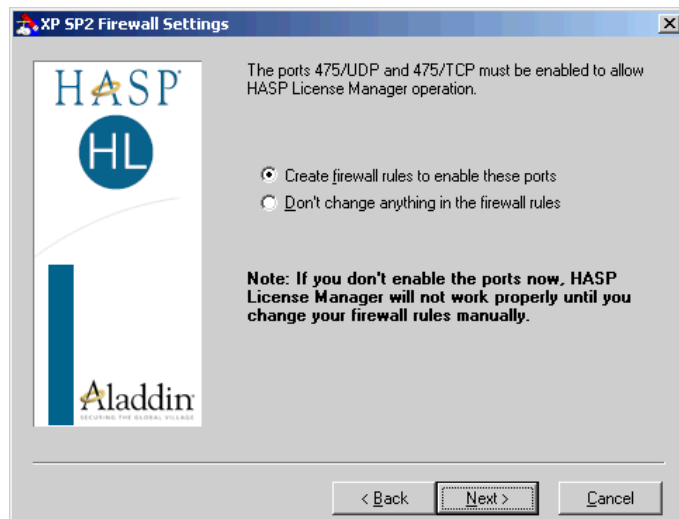
NetHASP Licence Manager Select Program Manager Group dialog

13. Select your preferred group.
14. Click **Next**. At this point, if you opted (contrary to our recommendation) to install the Licence Manager as an application, the Put Into Startup Folder dialog will appear.



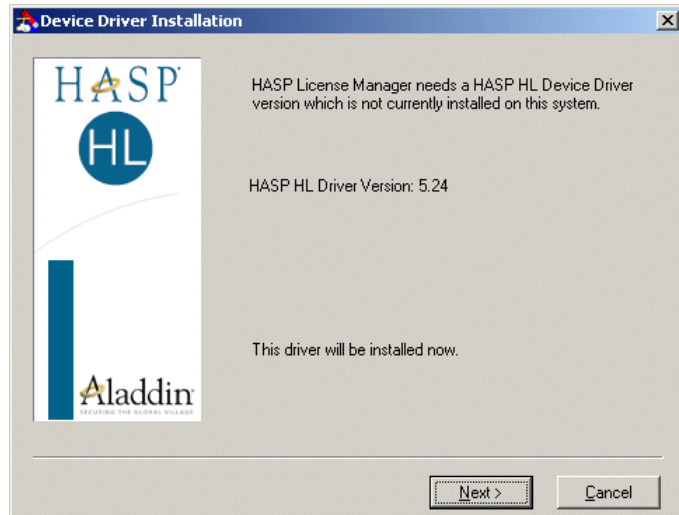
NetHASP Licence Manager Put Into Startup Folder dialog

15. Select **Put into Startup Folder** if you want the licence manager to start automatically when the computer is rebooted.
16. Click **Next**. If you have a firewall enabled that would stop the licence manager from working then the XP SP2 Firewall Settings dialog will appear.



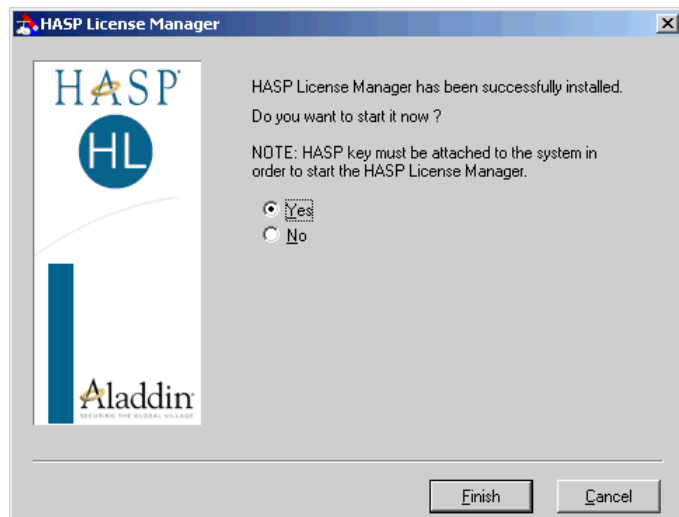
NetHASP Licence Manager XP SP2 Firewall Settings dialog

17. If you do not allow Setup to create the necessary firewall rules then you will have to set them up manually or AutoTrack will not work.
18. Click **Next**. The installation process will now start.
19. When the installation has finished the Device Driver Install dialog will appear (note that you may not see this screen if you already have a suitable device driver installed) and you will be given the opportunity to install the HASP device drivers.



NetHASP Licence Manager Driver Install dialog

20. The HASP device driver must be installed before the system will work so we recommend that you click **Next** to install them now. You should see a message that the hardware lock drivers have been successfully installed.
21. Click **Next**. The Start Licence Manager dialog will appear.



NetHASP Licence Manager Start Manager dialog

22. Make certain that the correct hardware lock is plugged in. The licence manager will not start unless the key is attached.
23. Select **Yes** to start the Licence Manager and then click **Finish**.
24. At this stage if you are using a USB dongle it should be glowing to indicate that it is working.

Installing the licence manager on a Novell Netware server

Warning

The Licence Manager will only work on servers which have IPX installed. You should use the Win32 Licence Manager for Netware IP installations.

1. Plug the hardware lock into the parallel port of your Novell Netware file server.
2. Copy the file `HASPSERVE.NLM` to the system directory of the file server.
3. To load the Licence Manager type
4. `load haspserv`
5. To remove the Licence Manager type
6. `unload haspserv`
7. To load the Licence Manager automatically, add the line
8. `load haspserv`
9. to the file `AUTOEXEC.NCF` in the `sys:system` directory.

Moving the NetHASP Licence Manager (Network version only)

If you wish to move the network hardware lock to a different server then proceed as follows:-

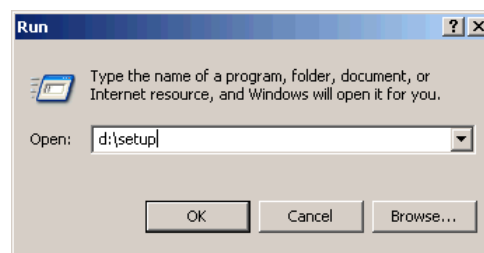
1. Uninstall or disable the NetHASP Licence Manager on the original server.
2. Install the NetHASP Licence Manager software on the new server as described above.
3. There is no need to enter a new authorisation keycode unless you have updated AutoTrack.
4. If you have set up AutoTrack to look for the licence manager at a specific IP address, you will need to update these now.

Installing the NetHASP Licence Monitor software (Network version only)

The Licence Monitor can be installed on any computer on any computer on the network and allows users to see how many licences are currently available.

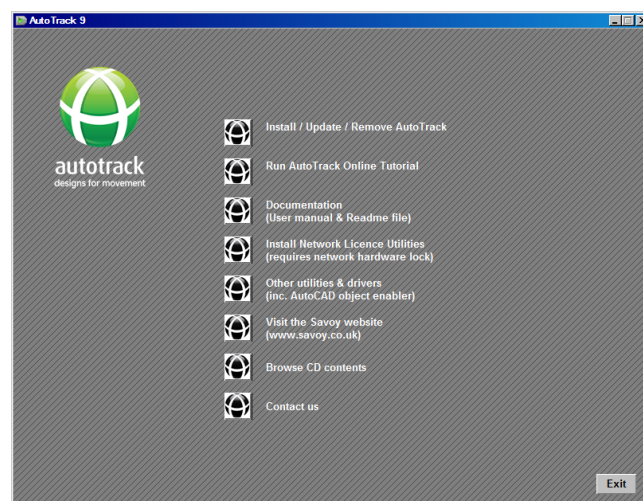
Installing the licence monitor on a Windows NT/2000/xp client computer

1. Insert the CD in the CD ROM drive of the chosen client computer. The CD will start automatically if autorun is enabled and you can proceed to step 4. If the CD does not start automatically then proceed as follows:-
2. Click the **Start** button and select Run. The Run dialog will appear.



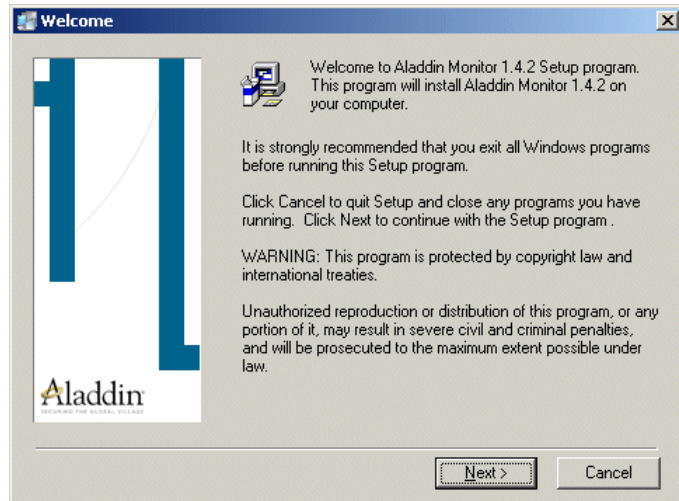
Windows 2002 Run dialogue

3. Type **d:setup** (change the drive letter to suit your CD) and click on **OK**.
4. The CD browser will appear.



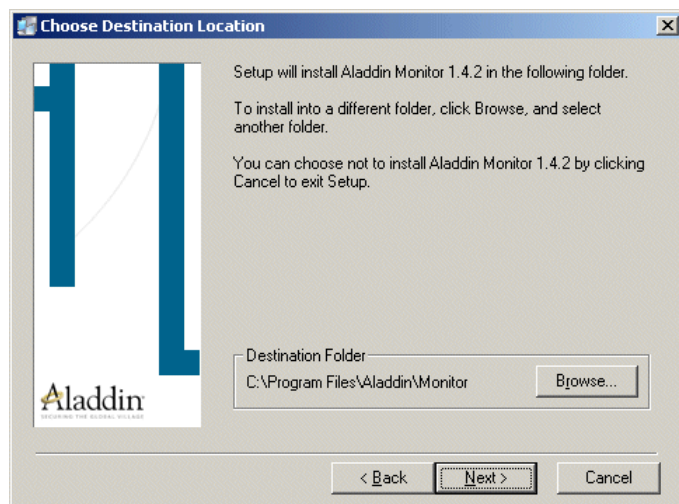
CD Browser

5. Click Install Network Utilities and then Install NetHASP Licence Monitor on a Win32 computer.
6. The Welcome dialog will appear.



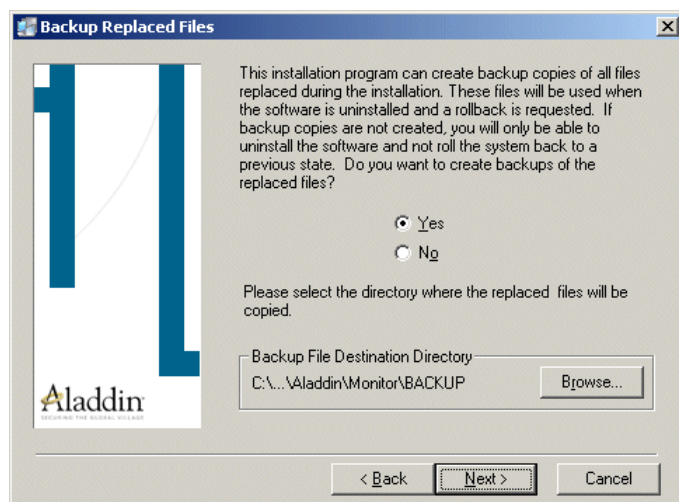
Welcome dialog

7. Click **Next**. Accept the Aladdin licence agreement and click **Next**. The Choose Destination Location dialog will appear.



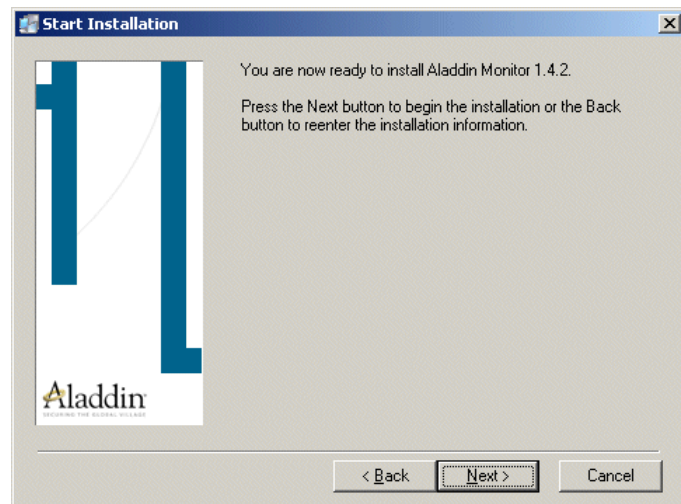
Choose Destination Location dialog

8. If you wish to change the default location then click **Browse** and select your preferred directory.
9. Click **Next**. The Backup Replaced Files dialog will appear.



Backup Replaced Files dialog

10. We recommend that you opt to backup replaced files so that, in the event of a problem, you can reinstate your computer to the state it was revert to the prior to installing the software.
11. Click **Next**. The Start Installation dialog will appear.



Start Installation dialog

12. Click **Next** to begin the installation.
13. Once installed the Monitor can be run by selecting **Start, Programs, Aladdin, Monitor, AKS Monitor**.

Installing, modifying, repairing or removing AutoTrack from a Windows Installer (msi) file

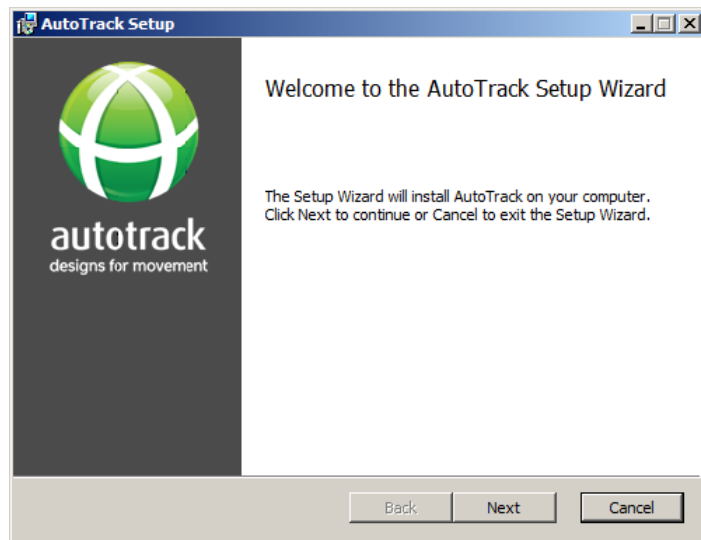
Run Windows as you normally would and follow the steps according to the media type.

Note

Windows NT users MUST be logged in with Administrator rights to install or update AutoTrack.

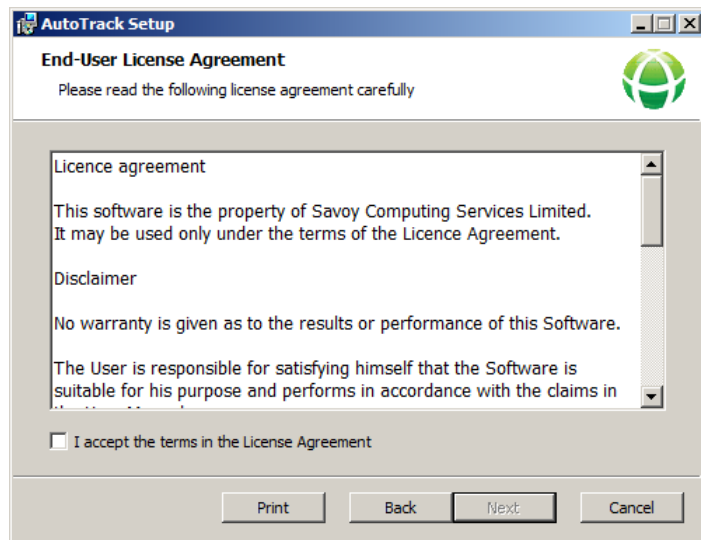
Installing AutoTrack

1. If you have downloaded a Windows Installer copy of AutoTrack you will have a file with a .msi extension. The name of this file is version specific but the file for v10.00 is called atr1000.msi. If you cannot see the file extension and have two files that appear to have the same name look for the one whose type is **Windows Installer Package**. Double click on the file. The Welcome dialog will appear.



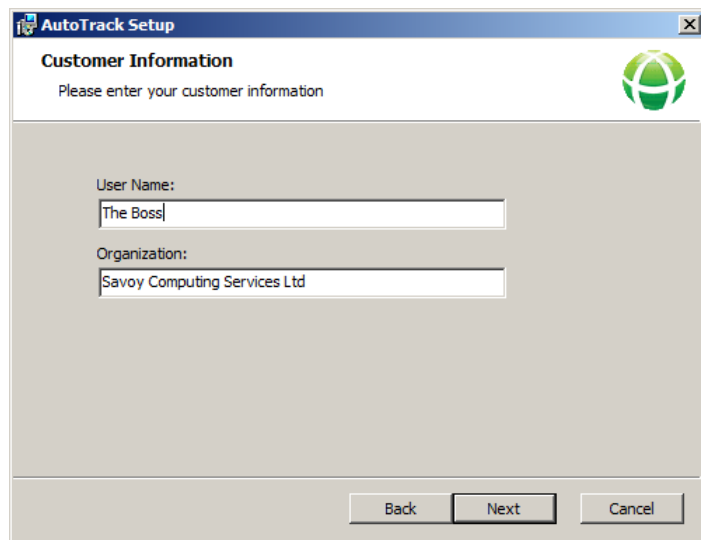
AutoTrack Setup Welcome dialog

2. Click **Next**. The End-User Licence Agreement dialog will appear.



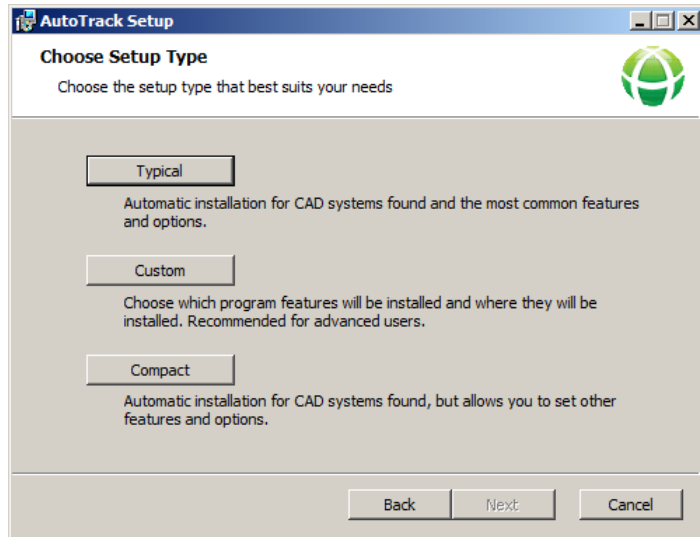
End-User Licence Agreement dialog

3. Tick **I accept the terms in the licence agreement** and click **Next**. The Customer Information dialog will appear.



Customer Information dialog

4. Enter your details and click **Next**. The Setup Type dialog will appear.



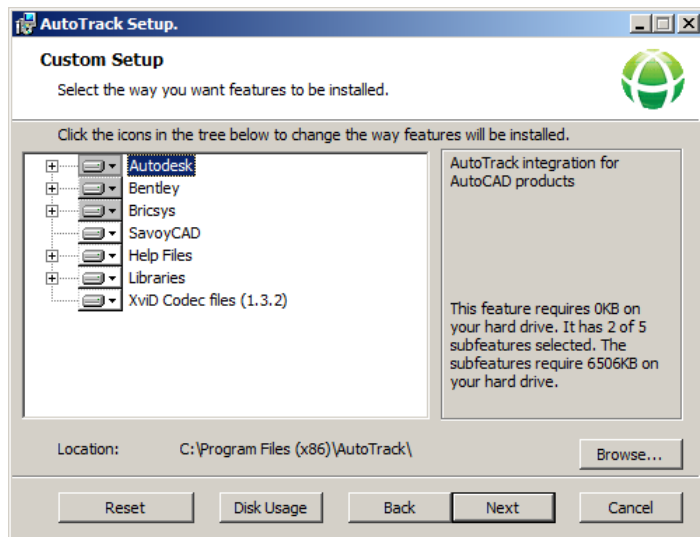
Setup Type dialog

5. Select **Typical** to install AutoTrack on all available platforms. On AutoCAD platforms AutoTrack will be installed on the AutoTrack profile (which will be created if necessary). Update checking will be enabled. The XviD compression codec will be installed. Adobe Acrobat Reader will be installed if necessary. Go to step 42.

Select **Custom** to choose which platforms you want to install or to exclude certain options. Go to step 6.

Select **Compact** if you want to install AutoTrack on all CAD systems found but want to specify the options. This option is ideal for creating silent script installs. Go to step 10.

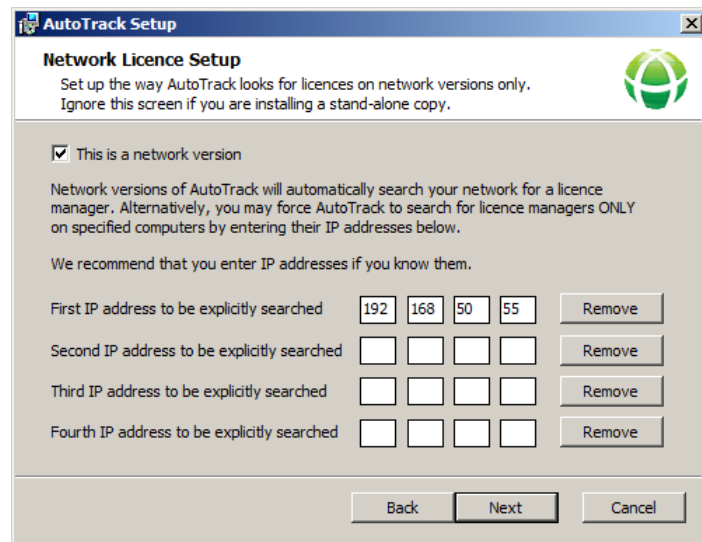
6. The Custom Setup dialog will appear.



Custom Setup dialog

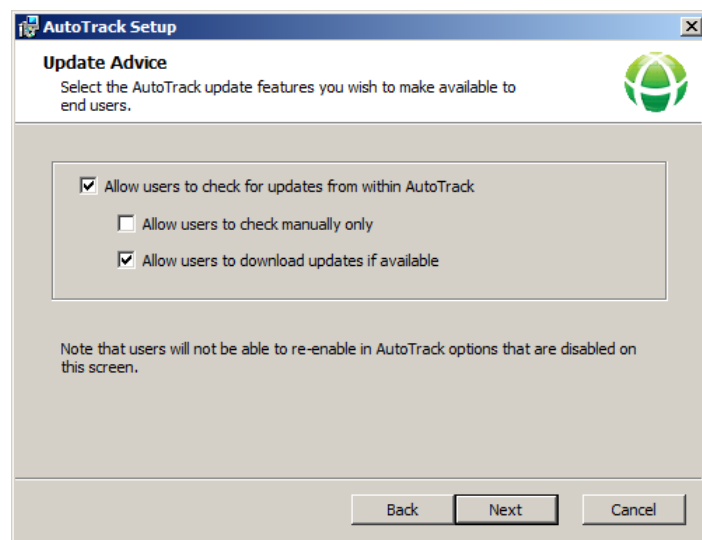
7. Select and/or deselect the features you require from the tree view. Note that AutoTrack Setup pre-selects all CAD systems it finds on your computer.
8. Click **Reset** if you wish to return to the default selections.
9. The default install location is displayed just above the buttons. If you wish to change this, click **Browse** and select an alternative.

10. Click **Next**. The Network Licence Setup dialog will appear.



Network Licence Setup dialog

11. Only tick **This is a network version** if you have a network hardware lock. Otherwise untick this option.
12. By default network versions of AutoTrack search for a network licence manager and maintain a search list automatically. We recommend that you use this default functionality. However, you may, if you wish, enter the IP addresses of up to four licence manager servers on this dialog. These addresses can also be maintained from AutoTrack.
13. Click Next. The Update Advice dialog will appear.



Update Advice dialog

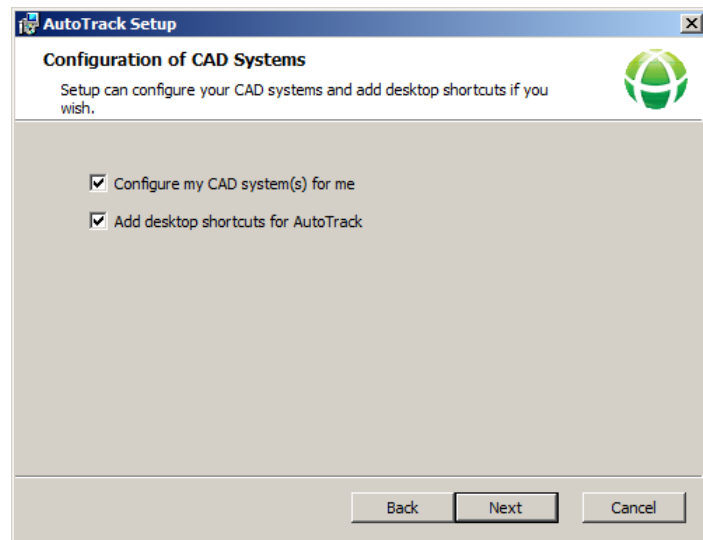
14. By default end users have options to check for more recent versions of AutoTrack either automatically (at a specified time interval) or manually.

If you wish to prevent users from checking for updates entirely then untick **Allow update checking**.

If you wish to only allow them to perform manual checks then tick **Allow manual check only**.

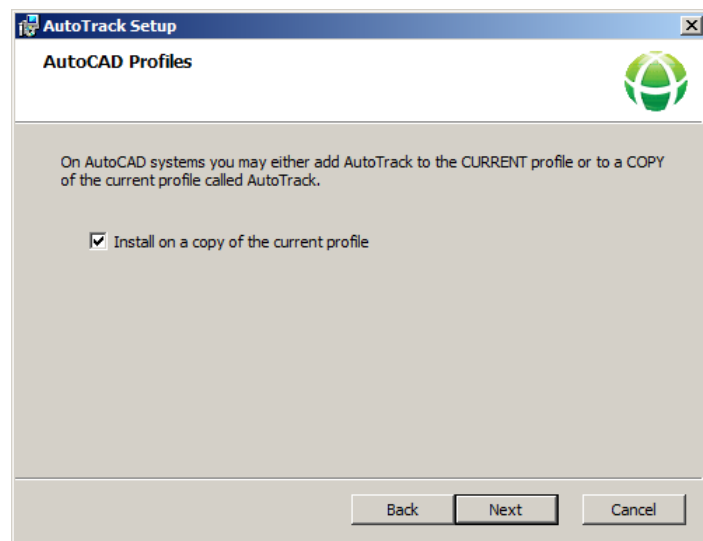
Finally, to allow them to check for updates but prevent them from downloading the file untick **Allow downloads**.

15. Click **Next**.



Configuration of CAD Systems dialog

16. You may either allow Setup to configure your CAD systems now or leave it until the first time the software is run. We recommend that you allow Setup to configure your CAD system so that when subsequently uninstall the software all settings and registry changes are reinstated. If you tick **Add desktop shortcuts for AutoTrack** Setup will add a shortcut icon for each platform that you have selected. Tick the options you require.
17. Click **Next**. If you have allowed Setup to configure your CAD systems then the AutoCAD Profiles dialog will appear.

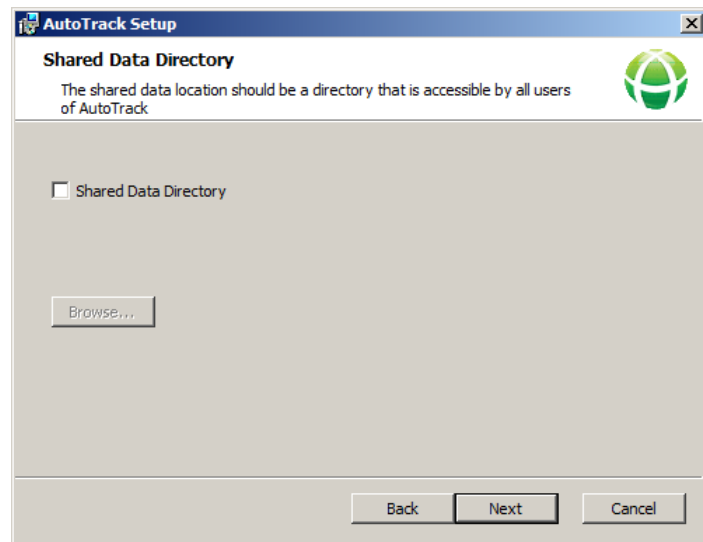


AutoCAD Profiles dialog

18. On AutoCAD you can opt to install AutoTrack onto a copy of the current profile called AutoTrack or directly onto the current profile. By default it is installed on a copy of the current profile. Untick **Install on a copy of the current profile** if you want to add AutoTrack to the current profile. If a profile called AutoTrack already exists, AutoTrack will be added to it. If you opted to

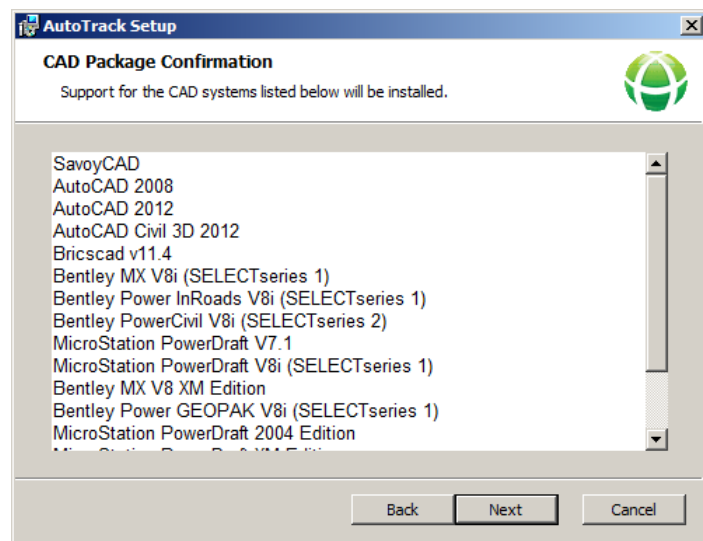
manually configure your system then AutoTrack will be installed onto the current AutoCAD profile each time it is run if necessary.

19. Click **Next**. The Shared Data Directory dialog will appear.



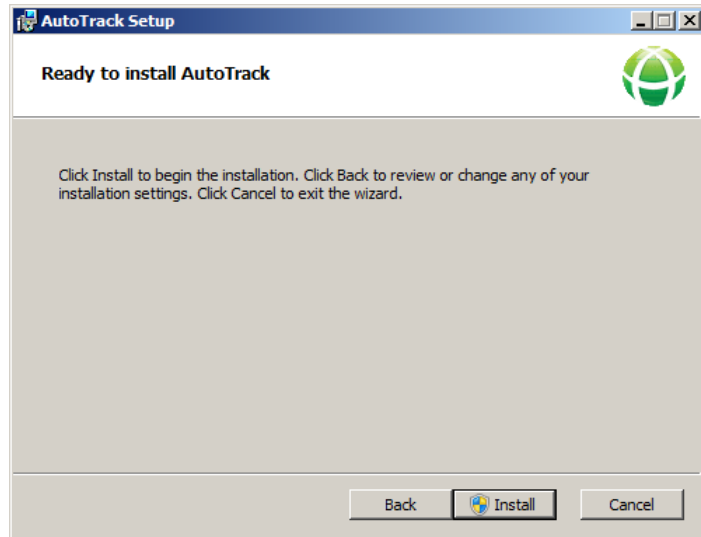
Shared Data Directory dialog

20. Tick **Shared Data Directory** if you wish to allow your users to share data within your organisation. The default shared data directory will be displayed just above the Browse button.
21. To change the directory, click **Browse** and browse to the required directory.
22. Click **Next**. The CAD Package Confirmation dialog will appear.



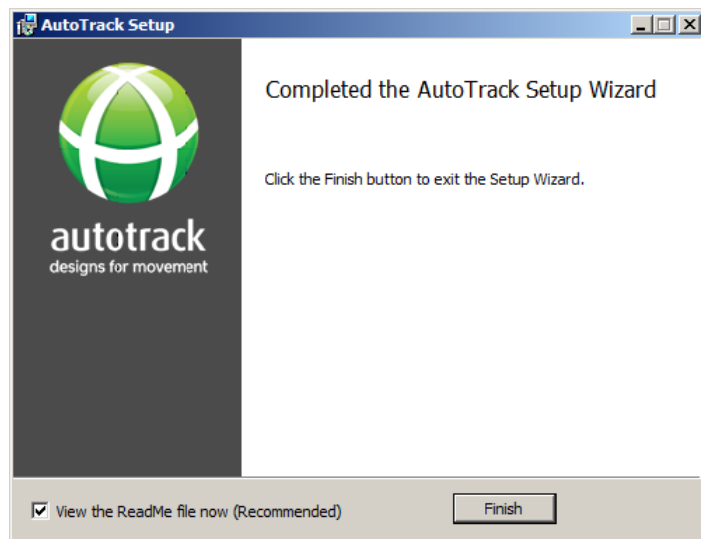
CAD Package Confirmation dialog

23. Double check that you are installing the correct versions and click **Next**. The Ready to install AutoTrack dialog will appear.



Ready to Install AutoTrack dialog

24. Click **Install** to start the installation process.
25. When file copying is finished the Completed dialog will appear.



Completed dialog

26. The readme file lists new features and bugs fixed in the new version.
27. Click **Finish**.

Modifying, repairing or removing AutoTrack

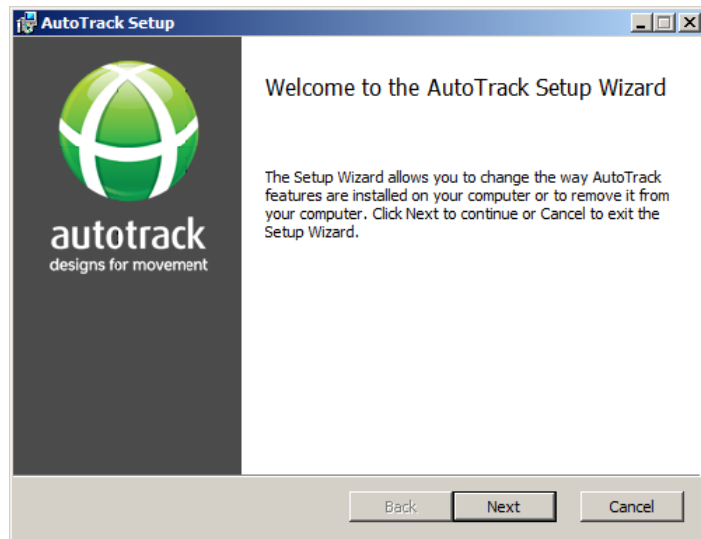
Tip

*We strongly recommend that you configure your copy of AutoTrack via the AutoTrack entry in the **Programs and Features** applet (or, on older copies of Windows, the **Add/Remove Programs** applet) in Control Panel. Alternatively, proceed as follows:-*

1. If you have downloaded a Windows Installer copy of AutoTrack you will have a file with a .msi extension. The name of this file is version specific but the file for v10.00 is called atr1000.msi. If you cannot see the file extension and have two files that appear to have the same name look for the one whose type is **Windows Installer Package**. Double click on the file.

2. If you see the Welcome to the AutoTrack Setup New Install dialog then you do not have a copy of AutoTrack installed on your computer. Refer to [Installing AutoTrack](#).

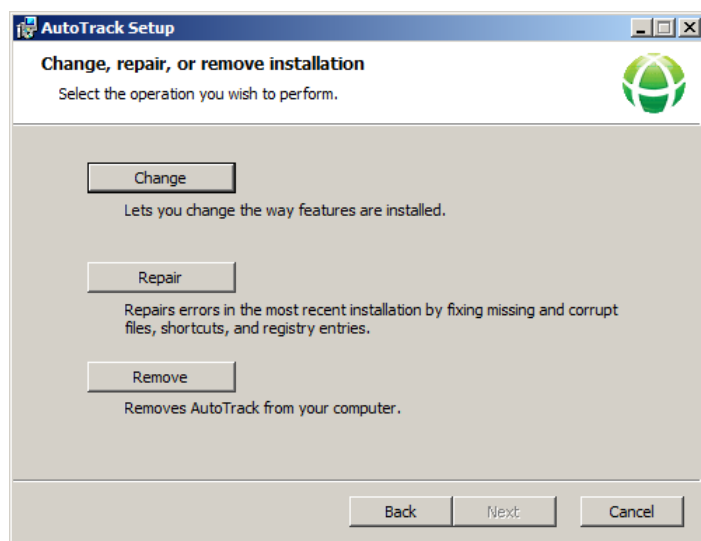
Otherwise the Welcome to the AutoTrack Setup Maintenance dialog will appear.



Welcome to the AutoTrack Setup Maintenance dialog

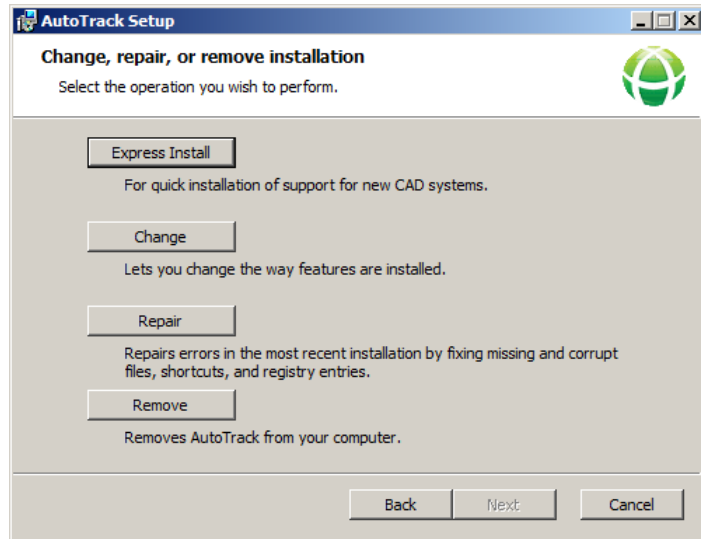
If you also get a message ***'Another version of this product is already installed...'*** then you either have a different version of AutoTrack installed or it was installed by a different installer. We recommend that you configure or remove the software via the AutoTrack entry in the Programs and Features applet in Control Panel. Alternatively, obtain a copy of the original installer.

3. Click **Next**. The **Change, repair or remove installation** dialog will appear.



Change, repair or remove installation dialog

If you have installed new CAD systems since you installed AutoTrack, or if you did not originally install AutoTrack on all CAD systems on your computer, then you will have an extra option to **Express Install** support for the new CAD systems.



Change, repair or remove installation dialog

4. If you just want to add AutoTrack support for newly installed CAD systems then click **Express Install**. Setup will update your system and close when it has finished.

If you wish to add or remove support for a specific CAD system or to add or remove other program files (e.g. the on-line manual) select **Change**. Refer to step 6 onwards in [Installing AutoTrack](#).

If you have reason to believe that a file is missing or has become corrupted then select **Repair**. This will reinstall all the files installed by the previous setup to the same location.

If you wish to remove AutoTrack from your computer select **Remove**. You will be asked to confirm and then AutoTrack will be removed and Setup will close.

Installing, modifying, repairing or removing AutoTrack from a CD or from a self-extracting installer (exe) file

Run Windows as you normally would and follow the steps according to the media type.

Note

Windows NT users MUST be logged in with Administrator rights to install or update AutoTrack.

Installing AutoTrack

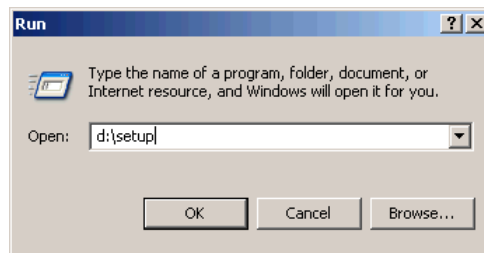
1. **If you have downloaded a self-extracting installer copy of AutoTrack**

You will have a file with a .exe extension. The full name is version specific but the file for v10.00 is called atr1000.exe. If you cannot see the file extension and have two files that appear to have the same name look for the one whose type is **Application**. Double click on the file to start the install and go to step 6.

If you have an AutoTrack CD

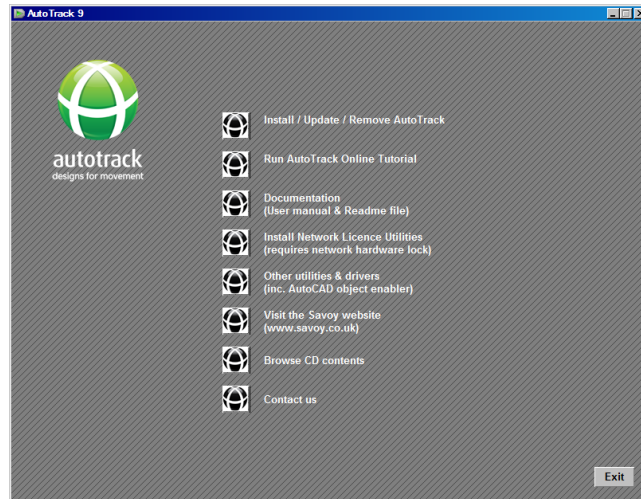
Insert the CD in the drive. The CD should start automatically if autorun is enabled and you can proceed to step 4. If the CD does not start automatically then proceed as follows:-

2. Click the **Start** button and select **Run**. The Run dialog will appear.



Windows XP Run dialogue

3. Type **d:setup** (change the drive letter to suit your CD) and click on **OK**.
4. The CD browser will appear.



CD Browser

5. Click **Install / Update / Remove AutoTrack**.

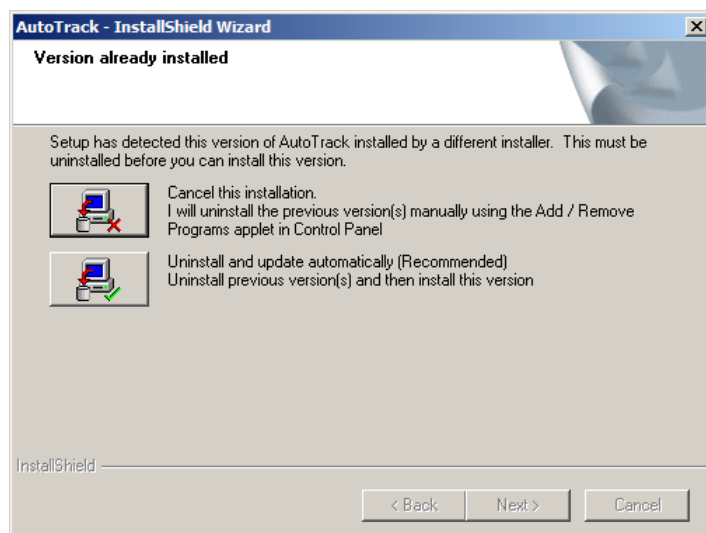
Warning

If you have a newer version of AutoTrack installed, or the object enabler version these must be uninstalled manually before you can install standard AutoTrack.

6. On the Choose Setup Language dialog you can select your preferred installation language. Click **Next**.
7. If you are installing AutoTrack for the first time on a computer the Welcome to the InstallShield Wizard for AutoTrack dialog will appear. Go to the next step.

If instead you see the Welcome to the AutoTrack Setup Maintenance dialog then you already have this version of AutoTrack installed on your computer. Refer to [Modifying, repairing or removing AutoTrack](#).

If you already have a different version of AutoTrack installed then you will see the Version Already Installed dialog.

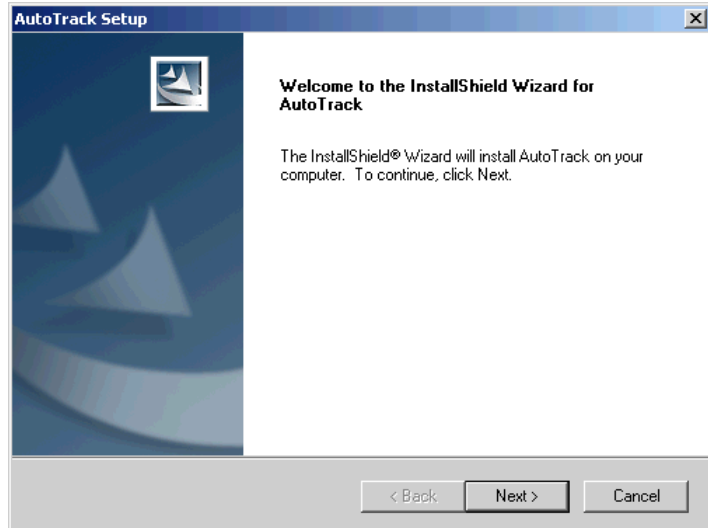


Version Already Installed dialog

Before you can install a new version of AutoTrack any previous version must be uninstalled. You have two options:-

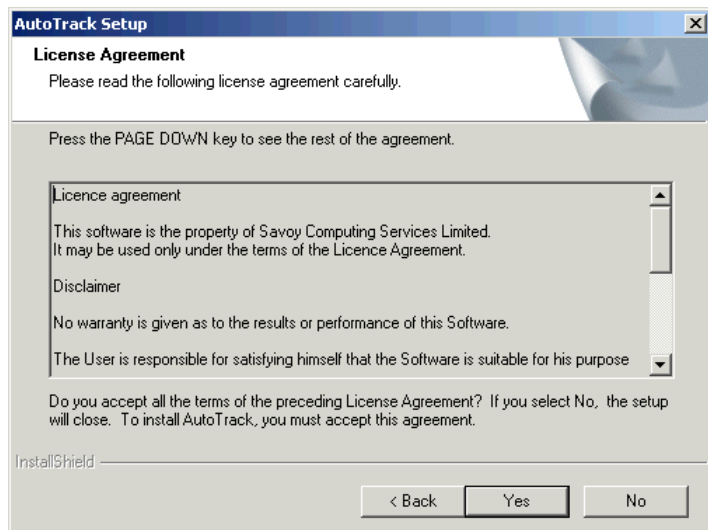
Select **Cancel this installation** if you don't want the previous version removed just yet or if you want to remove the previous version yourself. Setup will close.

Select **Uninstall and Update Automatically** if you want Setup to remove the previous version for you and install the new version. When it has finished uninstalling the previous version you will see the Welcome to the InstallShield Wizard for AutoTrack dialog.



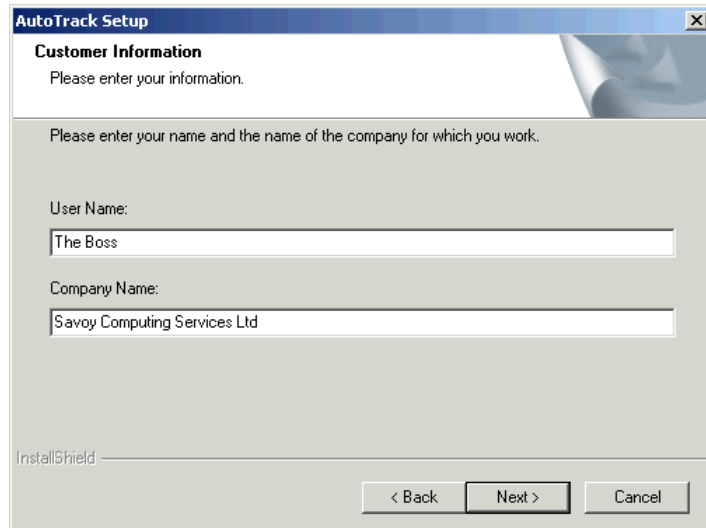
Welcome to the Installshield Wizard for AutoTrack dialog

8. Click **Next** to start the installation process. The Licence Agreement dialog will appear.



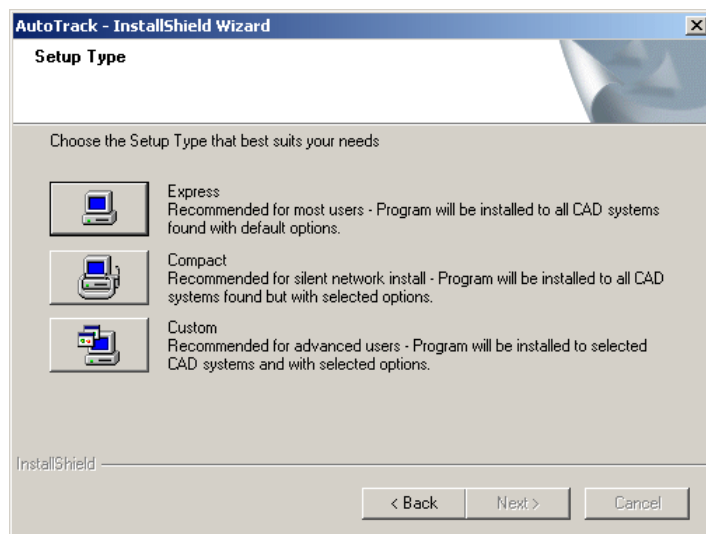
Licence Agreement dialog

9. Click **Yes** if you accept the terms of the licence agreement. The User Information dialog will appear.



User Information dialog

10. Enter your details.
11. Click **Next**. The Setup Type dialog will appear.



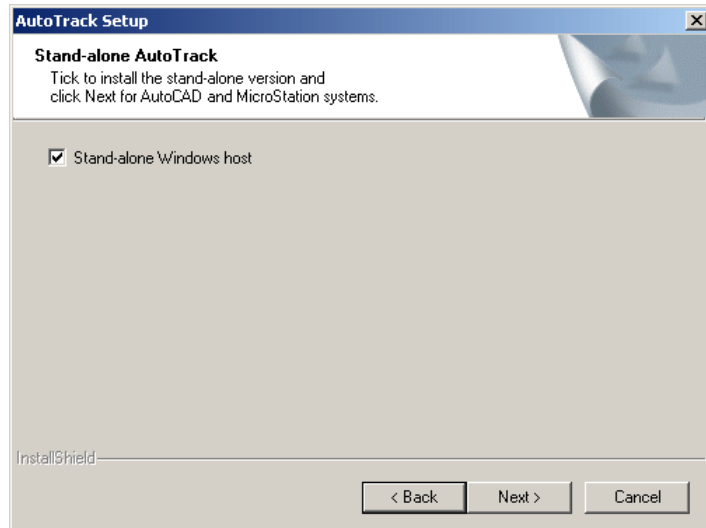
Setup Type dialog

12. Select **Express** to install AutoTrack on all available platforms. On AutoCAD platforms AutoTrack will be installed on the AutoTrack profile (which will be created if necessary). Update checking will be enabled. The XviD compression codec will be installed. Adobe Acrobat Reader will be installed if necessary. Go to step 42.

Select **Compact** if you want to install AutoTrack to all CAD systems found but want to specify the options. This option is ideal for creating silent script installs. Go to step 20.

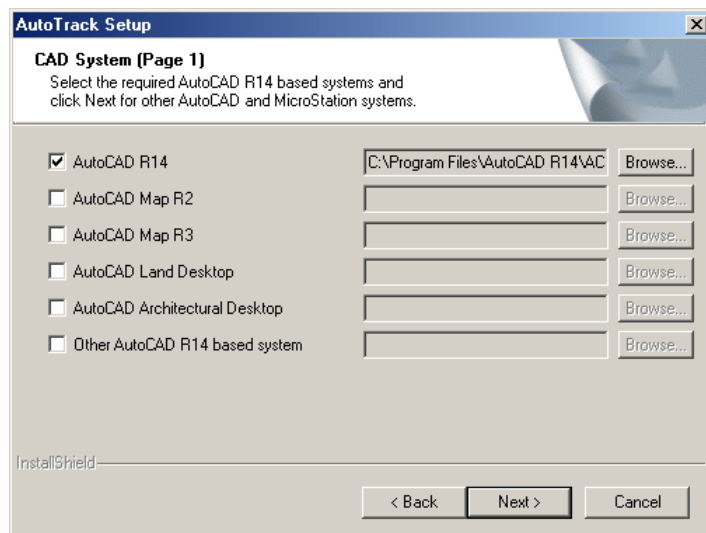
Select **Custom** to choose which platforms you want to install or to exclude certain options. Go to step 13.

13. The Stand-alone AutoTrack dialog will appear.



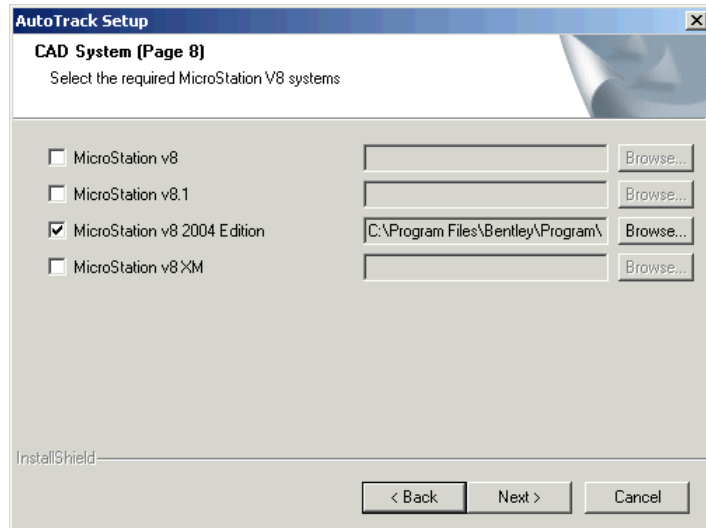
Stand-alone AutoTrack dialog

14. Tick the box if you want the stand-alone Windows host installed.
15. Click **Next**. A series of third party CAD system selection dialogs will appear starting with BricsCAD, followed by AutoCAD 14 based CAD systems.



CAD System dialog (AutoCAD R14)

16. Select the AutoCAD R14 based systems on which you wish to run AutoTrack by ticking the appropriate boxes. Note that all CAD systems that Setup has found on your system will have the CAD program executable file in the edit box and will be selected by default. Setup can only fully install and configure AutoTrack for CAD systems that it can find.
17. If you wish to install support for a system that has no file listed then tick the option and click the appropriate **Browse** button. Now browse to the directory where Setup can find the required file. Any CAD system that you select that does not have a path listed will not be correctly installed.
18. Click **Next**. The AutoCAD 2000/2000i based system selection dialog will appear now followed by pages for AutoCAD 2002 to 2012, MicroStation systems followed by MicroStation derivative systems.



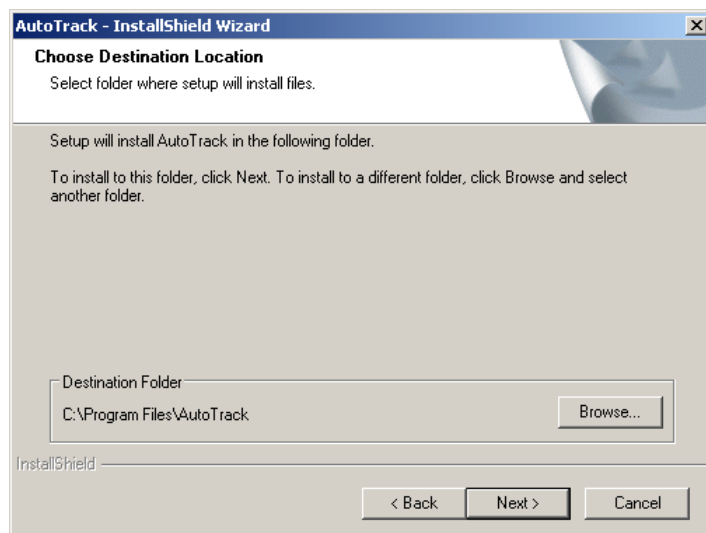
CAD System dialog (MicroStation V8)

19. Select the MicroStation based systems on which you wish to run AutoTrack by ticking the appropriate boxes.

Note

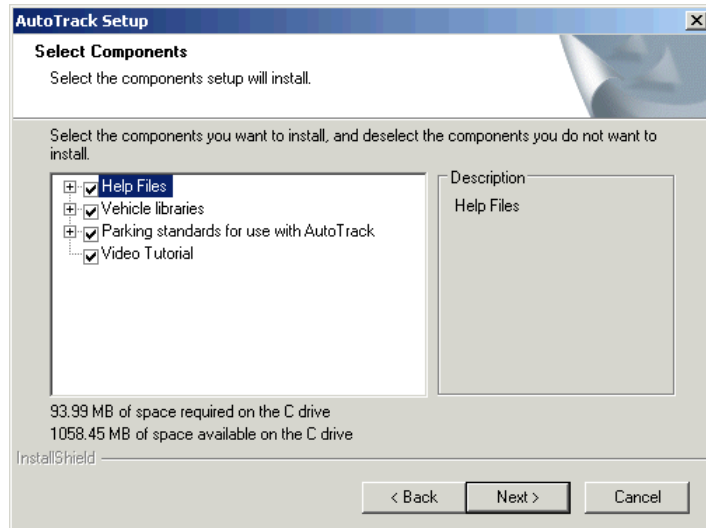
All versions found on your computer are selected by default.

20. Click **Next**. The Choose Destination Location dialog will appear.



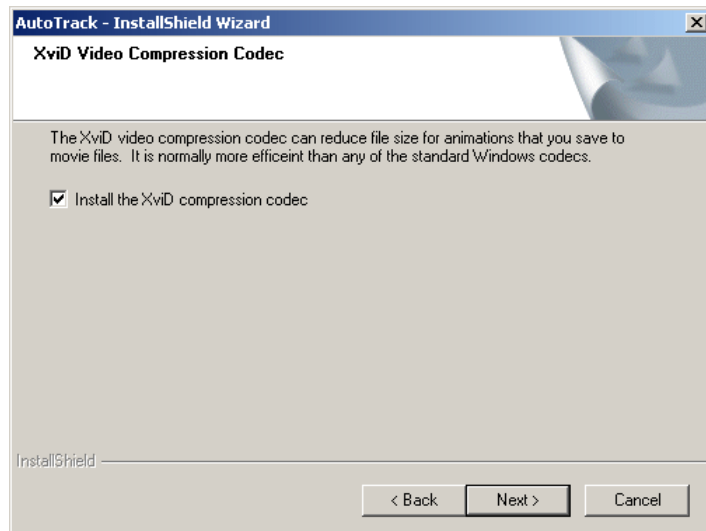
Choose Destination Location dialog

21. If you wish to change the default location then click **Browse** and select your preferred directory.
22. Click **Next**. If you selected the custom installation then the Select Components dialog will appear.



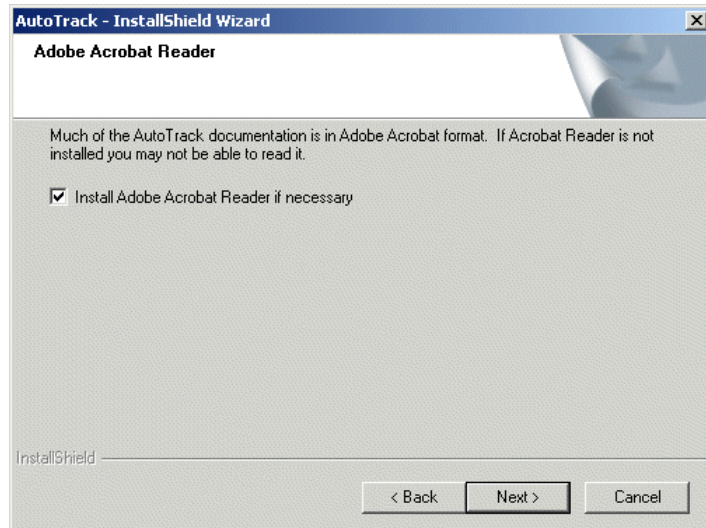
Select Components dialog

23. Select the components that you require by checking the boxes.
24. Click **Next**. The XviD Compression Codec dialog will appear.



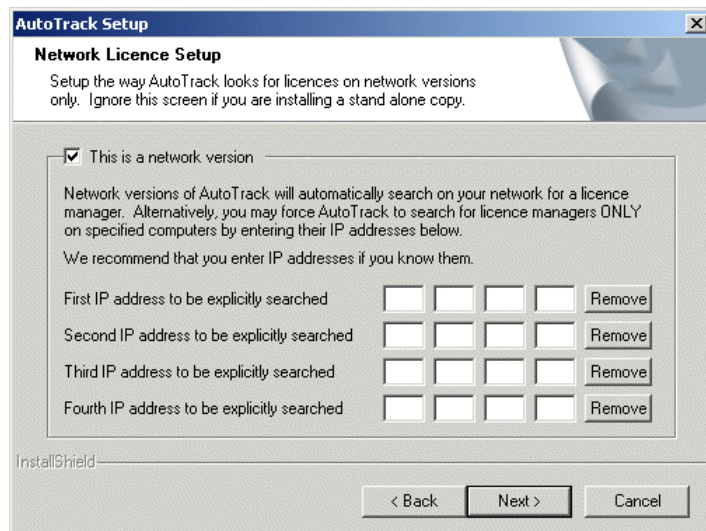
XviD Video Compression Codec dialog

25. If you create an AVI file of an animation you will probably need to use a video compression codec to reduce the file size to a manageable level. Various video compression codecs are installed with Windows as standard but we have found the XviD video compression codec to be better than these in terms of both compression level and quality.
26. Click **Next**. The Adobe Acrobat Reader dialog will appear.



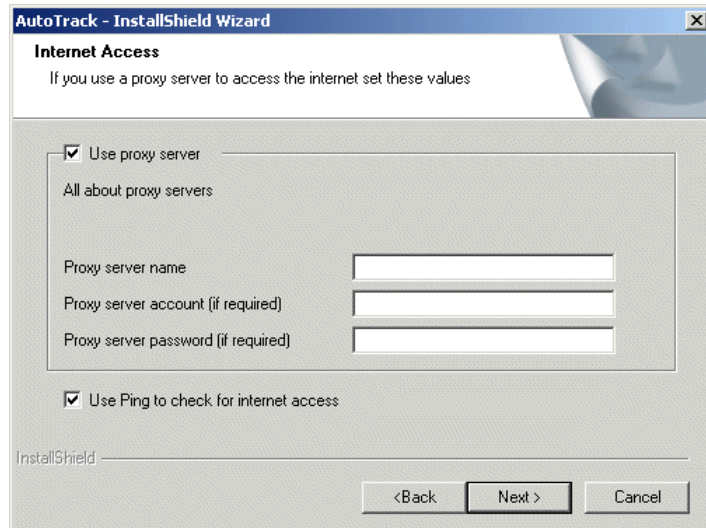
Adobe Acrobat Reader dialog

27. More than likely you already have Adobe Acrobat Reader installed on your computer but if you don't then you will not be able to read or print the AutoTrack documentation.
28. Click **Next**. The Network Licence Setup dialog will appear.



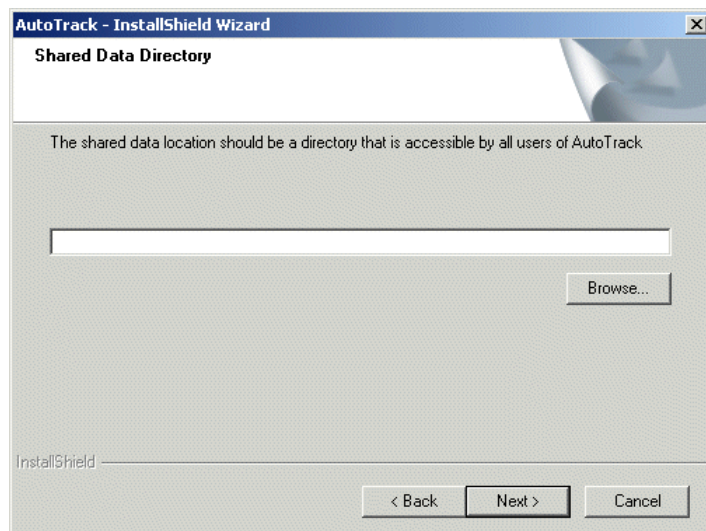
Network Licence Setup dialog

29. Only tick **This is a network version** if you have a network hardware lock. Otherwise untick this option.
30. By default network versions of AutoTrack search for a network licence manager and maintain a search list automatically. We recommend that you use this default functionality. However, you may, if you wish, enter the IP addresses of up to four licence manager servers on this dialog. These addresses can also be maintained from AutoTrack.
31. Click **Next**. The Internet Access dialog will appear.



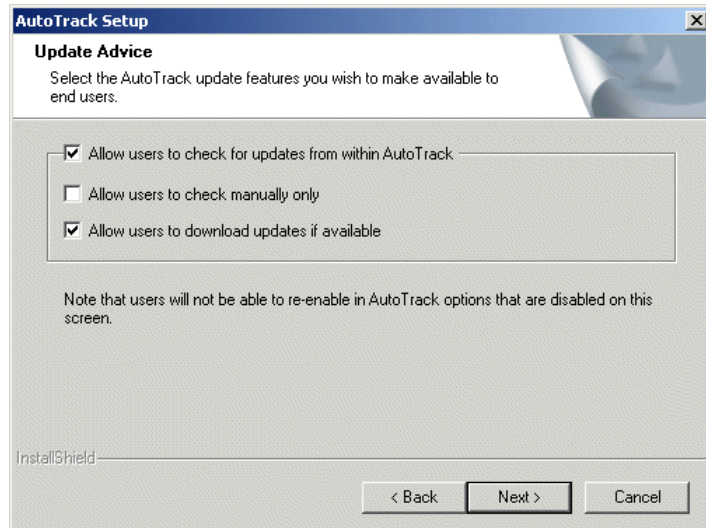
Internet Access dialog

32. If you use a proxy server then you should enter the details here. You may suffix the **Proxy server name** with the port number if required, e.g. www.savoy.co.uk:8080.
33. Click **Next**. The Shared Data Directory dialog will appear.



Shared Data Directory dialog

34. Enter the full path of the directory you wish to use to share data within your company or department.
35. Click **Next**. The Update Advice dialog will appear.



Update Advice dialog

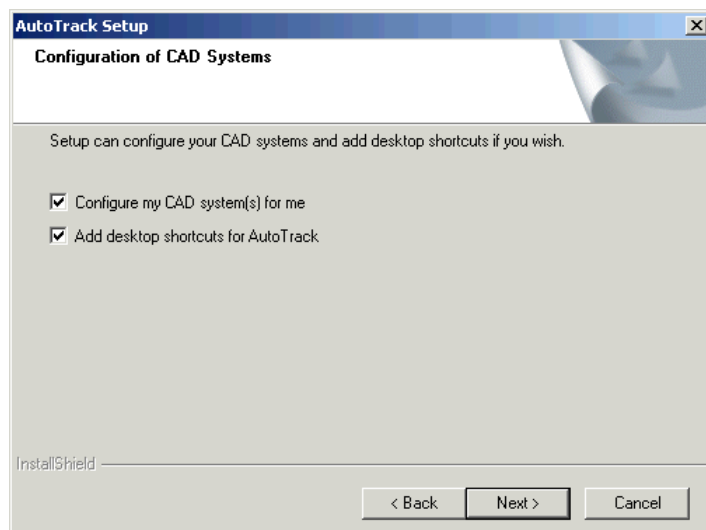
36. By default end users have options to check for more recent versions of AutoTrack either automatically (at a specified time interval) or manually.

If you wish to prevent users from checking for updates entirely then untick **Allow users to check for updates from within AutoTrack**.

If you wish to only allow them to perform manual checks then tick **Allow users to check manually only**.

Finally, to allow them to check for updates but prevent them from downloading the file untick **Allow users to download updates if available**.

37. Click **Next**. The Configuration of CAD systems dialog will appear.

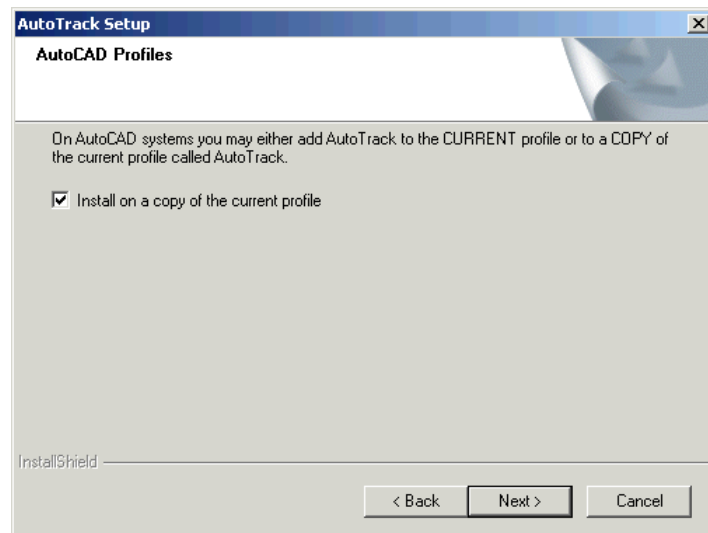


Configuration of CAD systems dialog

38. You may either allow Setup to configure your CAD systems now or leave it until the first time the software is run. We recommend that you allow Setup to configure your CAD system so that when subsequently uninstall the software all settings and registry changes are reinstated. If you tick **Add an AutoTrack desktop**

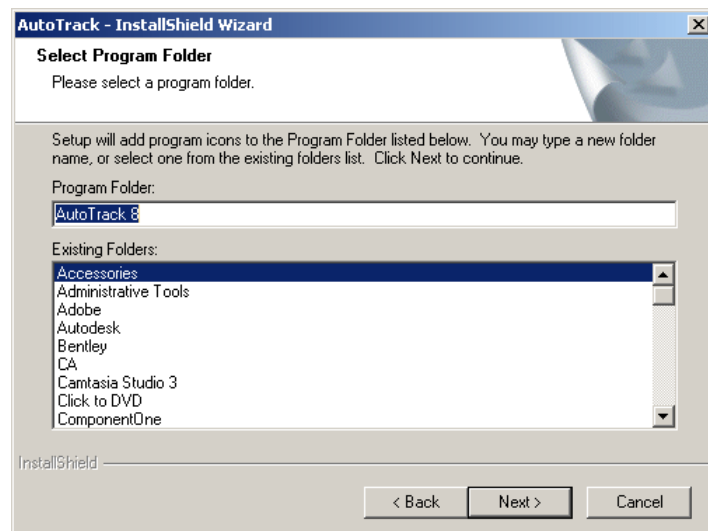
shortcut Setup will add a shortcut icon for each platform that you have selected. Tick the options you require.

39. Click **Next**. If you have allowed Setup to configure your CAD systems then the AutoCAD Profiles dialog will appear.



AutoCAD Profiles dialog

40. On AutoCAD you can opt to install AutoTrack onto a copy of the current profile called AutoTrack or directly onto the current profile. By default it is installed on a copy of the current profile. Untick **Install on a copy of the current profile** if you want to add AutoTrack to the current profile. If a profile called AutoTrack already exists, AutoTrack will be added to it. If you opted to manually configure your system then AutoTrack will be installed onto the current AutoCAD profile each time it is run if necessary.
41. Click **Next**. The Select Program Folder dialog will appear.



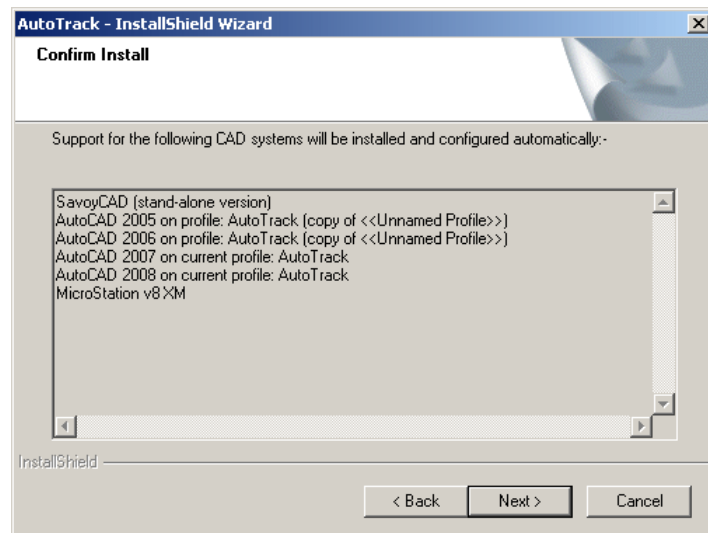
Select Program Folder dialog

42. By default Setup will install AutoTrack to the AutoTrack folder. Select an existing alternative or enter a new folder name if you wish.

Note

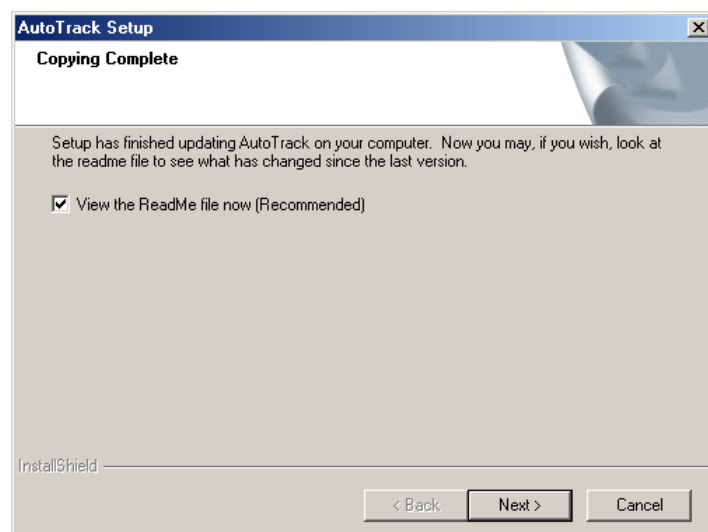
You will not see this dialog if you are modifying an installation.

43. Click **Next**. The Confirm Edits dialog will appear.



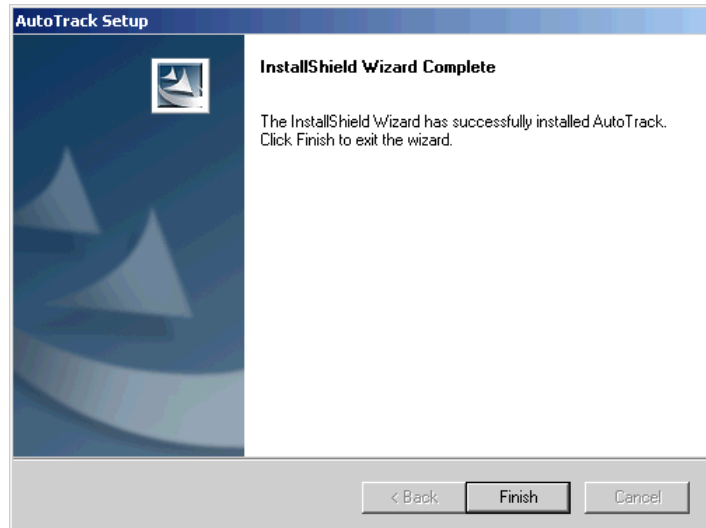
Confirm Edits dialog

44. Double check that you are installing the correct versions (and on the correct AutoCAD profiles) and click **Next**. The installation process will now start.
45. Once AutoTrack has been installed the XviD codec will be installed if required followed by Acrobat Reader if required. In both cases, follow the prompts and accept the default values.
46. Next the hardware lock driver will be installed. During driver installation the hardware lock must be removed. The hardware lock installer is designed to run with no user interaction and should not be interrupted. You will be prompted to reinsert the hardware lock as soon as it is safe to do so.
47. When file copying is finished the Copying Complete dialog will appear.



Copying Complete dialog

48. The readme file lists new features and bugs fixed in the new version.
49. Click **Next**. The Setup Complete dialog will appear.



Setup Complete dialog

50. If it is necessary to restart your computer then you will be given the option to restart it now or later. Select your preference and click **Finish**.
51. If you chose to have Setup configure your CAD system for you then you should now be able to see AutoTrack on the top menu bar in AutoCAD or under the Applications menu on MicroStation.
52. If you chose not to allow Setup to configure your CAD system for you then refer to the section entitled [Configuring AutoCAD manually](#) or [Configuring MicroStation, Bentley PowerDraft, PowerCivil, Power InRoads, Power GEOPAK or MX manually](#) as appropriate.

Note

AutoTrack cannot be configured to run automatically from a shortcut on Bentley MX. Users on this platform must load the product manually.

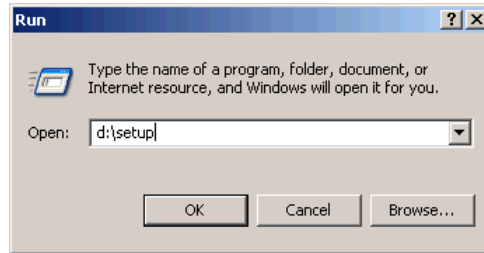
Modifying, repairing or removing AutoTrack

Tip

*We strongly recommend that you configure your copy of AutoTrack via the AutoTrack entry in the **Programs and Features** applet (or, on older copies of Windows, the **Add/Remove Programs** applet) in Control Panel. Alternatively, proceed as follows:-*

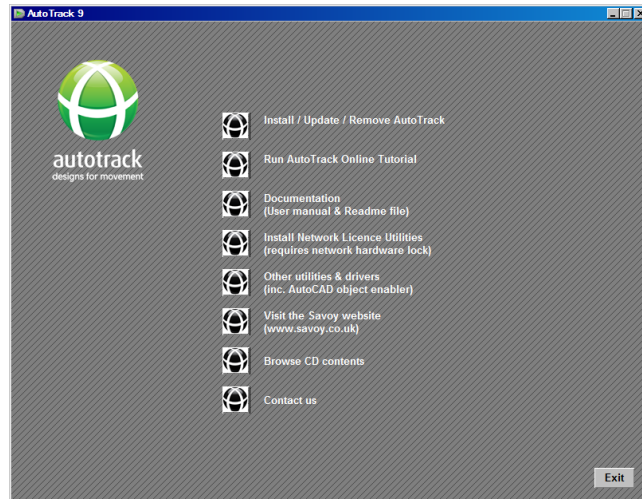
1. **If you have downloaded a self-extracting installer copy of AutoTrack**
You will have a file with a .exe extension. The full name is version specific but the file for v10.00 is called atr1000.exe. If you cannot see the file extension and have two files that appear to have the same name look for the one whose type is **Application**. Double click on the file to start the install and go to step 6.

If you have an AutoTrack CD
Insert the CD in the drive. The CD should start automatically if autorun is enabled and you can proceed to step 4. If the CD does not start automatically then proceed as follows:-
2. Click the **Start** button and select **Run**. The Run dialog will appear.



Windows XP Run dialogue

3. Type **d:\setup** (change the drive letter to suit your CD) and click on **OK**.
4. The CD browser will appear.



CD Browser

5. Click **Install / Update / Remove AutoTrack**.

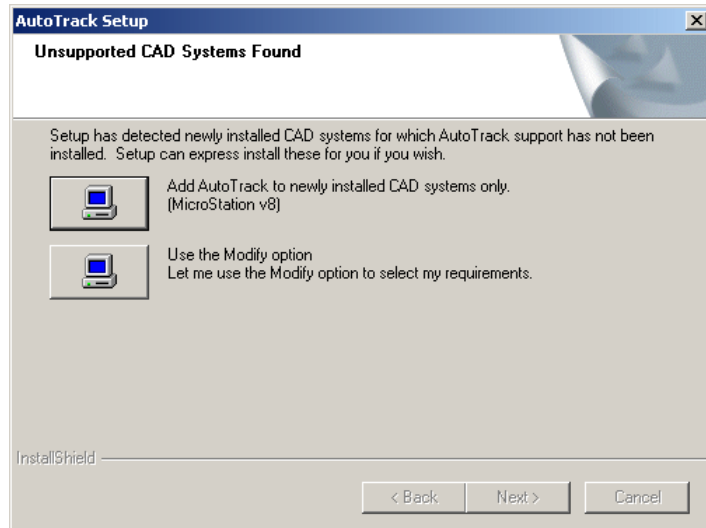
Note

If you have other applications running you may get a warning to close these applications so that shared files may be updated.

6. If you see the Welcome to AutoTrack Setup dialog then you do not have a copy of AutoTrack installed on your computer. Refer to [Installing AutoTrack](#).

If you see the Earlier Version Found dialog then you are installing a new version.

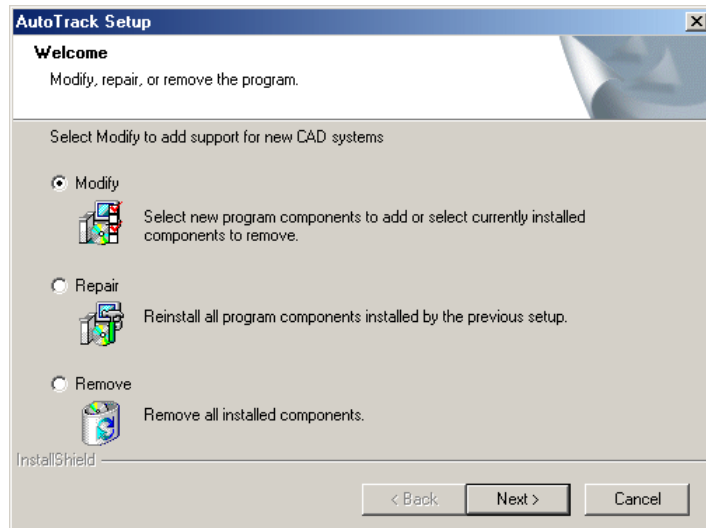
If you have installed new CAD systems since you installed AutoTrack, or if you did not originally install AutoTrack on all CAD systems on your computer, the Unsupported CAD Systems Found dialog will appear.



Unsupported CAD Systems Found Dialog

7. Depending upon your particular circumstances you may **Add AutoTrack to newly installed CAD systems only** or **Add AutoTrack to all unsupported CAD systems**. Setup will update your system and close when it has finished. You may also opt to **Use the Modify option** (see below).

If none of these apply, or if you opted to use the Modify option, the Welcome to the AutoTrack Setup Maintenance dialog will appear.



Welcome to the AutoTrack Setup Maintenance dialog

8. If you wish to add or remove support for a CAD system or to add or remove other program files (e.g. the on-line manual) select **Modify**. Refer to step 13 onwards in [Installing AutoTrack](#).

If you have reason to believe that a file is missing or has become corrupted then select **Repair**. This will reinstall all the files installed by the previous setup to the same location.

If you wish to remove AutoTrack from your computer select **Remove**. You will be asked to confirm and then AutoTrack will be removed and Setup will close.

Some points to note

Windows NT based systems (NT4, 2000, XP, 2003, Vista, Windows 7, etc.)

Default location of application data files

By default the AutoTrack settings files, menus and other data files are stored in folders in the common application data directory. This is usually located as follows:-

On Windows XP or earlier it is `C:\Documents and Settings\All Users\Application Data\AutoTrack`,

On Windows Vista or later it is `C:\Program Data\AutoTrack`.

Storing application data files elsewhere

Where ever you choose to store your AutoTrack data files all users must be granted FULL access rights to this location.

If you wish to store the AutoTrack application data files in another location then create a file in the AutoTrack installation directory called `SAVOY.INI` containing the following lines:-

```
[SETTINGS]
```

```
ApplicationDataDir={Application Data Directory}
```

Where the text in brackets (and the brackets themselves) should be replaced with the full path (or the path relative to the program installation directory) of the preferred data file location. For example:-

```
[SETTINGS]
```

```
ApplicationDataDir=D:\Example\AutoTrackAppData
```

You should then grant all AutoTrack users FULL access rights to this location.

Storing application data with the program

If you would rather your settings, menus and other application data files were stored with the program then we recommend that you do not specify the installation directory itself but create a subdirectory. Create a file in the AutoTrack installation directory called `SAVOY.INI` containing the following lines (we recommend `AppData` as a directory name but anything will do):-

```
[SETTINGS]
```

```
ApplicationDataDir=.\AppData
```

Then create `AppData` (or whatever you have called it) as a subdirectory of the program installation directory and grant all users FULL access rights. So, if you installed AutoTrack to the default location you need to create a directory called `C:\Program Files\AutoTrack\AppData`.

Access rights

AutoTrack must be installed by someone with Administrator rights. Depending upon your security policy, before you can run the software as an end user you may need to make changes to the user profiles. Login as a normal user and if AutoTrack is on the menu and runs you do not need to make the following changes. If AutoTrack is not on the menu and/or does not run then make the following changes as appropriate:-

Grant all AutoTrack users FULL access rights to the common application data directory. This is usually located as follows:-

On Windows XP or earlier, in the C:\Documents and Settings\All Users\Application Data\AutoTrack subdirectory

On Windows Vista or later, in the C:\Program Data\AutoTrack directory.

If you have specified an alternative application data directory in the SAVOY.INI file then grant all AutoTrack users FULL access rights to this directory.

Copy the AutoTrack menu from the Administrator's Start Programs menu to each AutoTrack user's menu.

If you are using Roaming Profiles consult your IT Department for advice.

AutoCAD object enabler

In the AutoCAD version of AutoTrack the path entity is a custom object that is calculated and drawn by AutoTrack. Systems must therefore have AutoTrack installed in order to update and maintain these objects. Proxy graphics allow non-AutoTrack users to see the data (see [Viewing AutoTrack paths in AutoCAD if you don't have AutoTrack](#)) but the functionality is very limited, e.g. you cannot snap to an AutoTrack path.

The object enabler is designed to give non-AutoTrack users limited functionality over AutoTrack data, allowing them, for example, to move reports or snap to a path to measure a distance. It also allows selection and playback of animations contained within a drawing.

The AutoTrack object enabler is free to download and is also available on the AutoTrack CD. It may be freely emailed to non-AutoTrack recipients of AutoTrack drawings. It cannot be installed with standard AutoTrack (there would be little point anyway).

This issue does not arise in the MicroStation or stand-alone versions that use different techniques.

Important

Use of the object enabler does not in any way diminish our recommendation that you save proxy graphics with your drawing. Furthermore, you should note that if you make a change using the object enabler proxy graphics will only be resaved if you have the appropriate system variables set (see [Viewing AutoTrack paths in AutoCAD if you don't have AutoTrack](#)).

To install the object enabler version from CD

1. First make sure that you do not have AutoTrack, either a demo or a full copy, installed.
2. Then insert the AutoTrack CD and when the CD menu appears, select **Other Utilities**. The installer will start.
3. Select **Install Object Enabler version**. Select **Express** to install the object enabler on all versions of AutoCAD found.

To install the software from the web

1. Download the object enabler version. It will have a filename of the form **ATRxxxO.EXE**, where **xxx** is the filename, e.g. **ATR920O.EXE**.
2. To install the software click the **Start** button on the Windows taskbar and select **Run**.
3. Browse to the file you have downloaded and click **Open** followed by **Run**. The installer will start.
4. Select **Install Object Enabler version**. Select **Express** to install the object enabler on all versions of AutoCAD found.

Scripted 'silent' installations using the self-extracting installer

AutoTrack Setup is fully ZENworks compatible allowing the full version (i.e. not the demo version) to be installed centrally and distributed on demand over a network with no user prompts.

The following instructions assume that you plan to install the software onto one or more client computers from a central source (file server).

Apart from obvious criteria such as adequate disk space, a successful silent installation requires that:-

- the install source files are mapped to the same location for all client PC's, and
- you either specify a Compact install or that all client computers have the selected CAD system(s) installed in the same location and run at least once.

Adobe Acrobat Reader and the XviD compression codec are third party applications and their installers require some user interaction. If you would rather users did not have to interact with the install process you should select Custom install and deselect these two options. Both items are installed if you perform an Express install.

Creating the install script

You must create the installation script on a client computer that is set up exactly as the other computers on which it will be installed silently.

1. Either copy the **ATRACK** directory from the AutoTrack CD to a suitable location on your file server's hard disk, or download the compressed file (e.g. `atr920.exe`) from the Savoy website to a suitable location on your file server's hard disk, such as a directory called **ATRACK**.
2. Now go to one of the client computers. To create the silent install script you need to run either `setup.exe` from the **ATRACK** directory on the server hard disk or the downloaded file (e.g. `atr920.exe`) with a `-r` switch. The easiest way to do this is to create a shortcut on the desktop.
3. Browse to the **ATRACK** directory, right click on the file **setup.exe** or the downloaded file (e.g. `atr920.exe`) and select **Create Shortcut**.
4. Move the shortcut to the desktop.
5. Right click on the new desktop shortcut, select **Properties** and add `-r` to the end of the **Target** field. The Target field should now read something like:-

```
f:\{source location}\atrack\setup.exe -r
```

or

```
f:\{source location}\atrack\atr920.exe -r
```

6. Click **OK** to close the properties dialog.

7. Double click on this shortcut to start the AutoTrack installation and follow the prompts to install AutoTrack in the normal way.
8. Your selections and values will be stored in a file called **setup.iss** in the Windows directory. We recommend that you do not tick the options on the Finish dialog to view the readme file and to run the hardware lock wizard.

Note

*If you intend to deploy AutoTrack while users are not logged in then perform a Custom install and deselect the option **Configure my CAD systems for me**.*

Running a silent install

1. Working from a client computer, move the file setup.iss from the Windows directory back to the **ATRACK** directory on the server's hard disk.
2. Now use windows explorer to browse to the file `setup.exe` or `atr920.exe` in the **ATRACK** directory on the server.
3. Right click on the file and select **Create Shortcut**.
4. Move the shortcut to a suitable location accessible by all potential users (probably in a public area on the server).
5. Right click on the new desktop shortcut, select Properties and add the `-s` switch to the Target field. The Target field should now read something like:-

```
f:\{source location}\atrack\setup.exe -s
```

or

```
f:\{source location}\atrack\atr920.exe -s
```

6. Click **OK** to close the properties dialog.
7. Double click on the desktop shortcut to start the silent install.
8. If you want to store the setup.iss file in another location use the additional switch `-f1` to show Setup where to find it. For example (no space between the `f1` and the path):-

```
-f1{iss file path}\setup.iss
```

You may wish to create different iss files for installing, removing and maintaining AutoTrack each named appropriately (e.g. **install.iss**, **remove.iss** or **maintain.iss**) and referenced as described above. Note however that the silent setup operation will fail if you run it out of sequence, e.g. if you try to remove a copy of AutoTrack that has not been installed it will fail. The error log file (setup.log) is created in the same directory as the iss file. If the last entry in the file, under the heading **[ResponseResult]**, is **ResultCode = 0** then the operation was successful; otherwise, it failed.

Note that even a silent install will fail with an error if certain criteria are not met. These include the following:-

- inadequate disk space,
- previous version installed,
- no CAD system selected,

- CAD system still running,
- the CAD system not having been run,
- not running with administrator rights,
- not having the required level of service pack,
- both AutoCAD 2000 and AutoCAD 2002 installed (not allowed by Autodesk),
- failure to perform an automatic edit,
- failure to create the program folder, or
- failure to migrate settings.

Adding files to an installation

Setup can run a batch file or other executable after it has finished installing AutoTrack if you supply the name of the file you wish to execute as a command line switch in the following format:-

```
f:\{source location}\atrack\setup.exe -s -batch={batch filename}
```

For example:-

```
c:\atrack\setup.exe -s -batch=c:\atrack\setup.bat
```

Note

You can use the `-batch` switch with the `-f1` switch.

Uninstalling AutoTrack

You can uninstall AutoTrack without going to Control Panel run Setup with a `-uninst` switch:-

```
f:\{source location}\atrack\setup.exe -uninst
```

However, this switch will still display a confirmation prompt.

To uninstall AutoTrack silently you will need to create an uninstall script. To do this go to a client computer that has AutoTrack installed and follow the steps in [Creating the install script](#) to create an uninstall script.

Updating AutoTrack

To perform a silent update of AutoTrack, we recommend that you run two scripts, one to uninstall the old version and a second to install the new version. This will require two `.iss` files referenced using the `-f1` switch. For example you might run:-

```
c:\atrack\setup.exe -s -f1c:\atrack\remove.iss
```

Followed by:-

```
c:\atrack\setup.exe -s -f1c:\atrack\install.iss
```

These two commands could be run from a single batch file. However, if you do this you should use the `-sms` switch to ensure that the first instance of setup has finished before the second one starts. Hence your batch file would look something like this:-

```
c:\atrack\setup.exe -s -sms -f1c:\atrack\remove.iss
c:\atrack\setup.exe -s -sms -f1c:\atrack\install.iss
```

Configuring AutoCAD manually

Note

Registry changes made by either of the following 'manual' methods will not be removed when you uninstall the product and hence we recommend that you allow Setup to configure your AutoCAD system for you.

If you chose not to allow Setup to configure your copy of AutoCAD then proceed as follows...

1. Run AutoTrack from the Start Programs menu which will load AutoCAD and AutoTrack. This will configure your system and you should then be able to see AutoTrack on your AutoCAD menu bar. Henceforth, however you run AutoCAD, AutoTrack should appear on the menu bar.

Alternatively for all versions of AutoCAD and all derivatives except Civil 3D 2010 and later...

1. Run AutoCAD as you normally do.
2. Type `APpload` at the command line.
3. If necessary change the **Files of type** box to include `*.ARX`.
4. Click the **File** button and browse to the AutoTrack directory (Normally `C:\PROGRAM FILES\AUTOTRACK`).
5. Highlight the program file appropriate to your CAD system as follows:-

For **AutoCAD R14**, Map R2, Map R3, Architectural Desktop, Land Development Desktop and other derivative products load the file `ATRA140.ARX`.

For **AutoCAD 2000**, 2000i, Map 2000, Map 2000i, Architectural Desktop 2i, Land Development Desktop 2i and other derivative products load the file `ATRA150.ARX`.

For **AutoCAD 2002**, Map 5, Map 6, Architectural Desktop 3, Architectural Desktop 3.3, Land Desktop 3 and other derivative products load the file `ATRA1506.ARX`.

For **AutoCAD 2004**, Map 2004, Architectural Desktop 2004, Land Desktop 2004 and other derivative products load the file `ATRA160.ARX`.

For **AutoCAD 2005**, Map 2005, Architectural Desktop 2005, Land Desktop 2005 and other derivative products load the file `ATRA161.ARX`.

For **AutoCAD 2006**, Map 2006, Architectural Desktop 2006, Land Desktop 2006, Civil 3D 2006 and other derivative products load the file `ATRA162.ARX`.

For **AutoCAD 2007**, Map 2007, Architectural Desktop 2007, Land Desktop 2007, Civil 3D 2007 and other derivative products load the file `ATRA170.ARX`.

For **AutoCAD 2008**, Map 2008, Architecture 2008, Land Desktop 2008, Civil 3D 2008 and other derivative products load the file

ATRA171.ARX.

For **AutoCAD 2009**, Map 2009, Architecture 2009, Land Desktop 2009, Civil 3D 2009 and other derivative products load the file ATRA172.ARX.

For **64-bit versions of AutoCAD 2009 based products**, load the file ATRA17264.ARX.

For **AutoCAD 2010**, Map 2010, Architecture 2010, Land Desktop 2010 and other derivative products except Civil 3D 2010 load the file ATRA180_ARX.ARX.

For **64-bit versions of AutoCAD 2010 based products except Civil 3D**, load the file ATRA18064_ARX.ARX.

For **AutoCAD 2011**, Map 2011, Architecture 2011, Land Desktop 2011 and other derivative products except Civil 3D 2011 load the file ATRA181_ARX.ARX.

For **64-bit versions of AutoCAD 2011 based products except Civil 3D**, load the file ATRA18164_ARX.ARX.

For **AutoCAD 2012**, Map 2012, Architecture 2012 and other derivative products except Civil 3D 2012 load the file ATRA182_ARX.ARX.

For **64-bit versions of AutoCAD 2012 based products except Civil 3D**, load the file ATRA18264_ARX.ARX. Click **Open**.

For **AutoCAD 2013**, Map 2013, Architecture 2013 and other derivative products except Civil 3D 2013 load the file ATRA190_ARX.ARX.

For **64-bit versions of AutoCAD 2013 based products except Civil 3D**, load the file ATRA19064_ARX.ARX.

6. Click **Open**.
7. Back in the Load/Unload Applications dialog click the **Load** button and then close the Load/Unload Applications dialog.
8. If you use profiles then make the required profile current.
9. Type **AUTOTRACK** on the command line. AutoTrack will be loaded and your CAD system will be configured for use.
10. Repeat steps 7 and 8 for other profiles as required.

For AutoCAD Civil 3D 2010 and later...

1. Run AutoCAD as you normally do.
2. Type **NETLOAD** at the command line.
3. If necessary change the **Files of type** box to include *.DLL.
4. Click the **File** button and browse to the AutoTrack directory (Normally C:\PROGRAM FILES\AUTOTRACK).
5. Highlight the program file appropriate to your CAD system as follows:-

For **AutoCAD Civil 3D 2010** load the file ATRC180_ARX.DLL.

For **AutoCAD Civil 3D 2011** load the file ATRC181_ARX.DLL.

For 64-bit **AutoCAD Civil 3D 2011** load the file ATRC18164_ARX.DLL.

For **AutoCAD Civil 3D 2012** load the file ATRC182_ARX.DLL.

For 64-bit **AutoCAD Civil 3D 2012** load the file

ATRC18264_ARX.DLL.

For **AutoCAD Civil 3D 2013** load the file ATRC190_ARX.DLL.
For 64-bit **AutoCAD Civil 3D 2013** load the file
ATRC19064_ARX.DLL.

6. Click the **Open** button.
7. If you use profiles then make the required profile current.
8. Type AUTOTRACK on the command line. AutoTrack will be loaded and your CAD system will be configured for use.
9. Repeat steps 7 and 8 for other profiles as required.
- 1.

Configuring MicroStation, Bentley PowerDraft, PowerCivil, Power InRoads, Power GEOPAK or MX manually

Setup configures all Bentley CAD variants except MX (or MXROAD) to run AutoTrack when run from the AutoTrack for [Bentley product] desktop shortcut or menu item. AutoTrack can (and must for Bentley MX) also be loaded manually via the MDL Applications dialog. However, Setup no longer creates a new workspace and no longer adds AutoTrack to the list of Available Applications in other workspaces. If you want to do this then proceed as follows...

1. Run your Bentley CAD system as you normally would.
2. Select the User or Workspace you want to configure.
3. Create or open a file.
4. If you are running Bentley MX, the **Workspace** menu may not be visible. Select **CAD Menu** from the File menu.
5. Select **Configuration** from the **Workspace** menu.
6. Select the category **Primary Search Paths**.
7. **To make AutoTrack run in this workspace...**
Click on **MDL Applications** from the edit box at the top right and then click the **Select** button. Browse to the `LOADERV8` subdirectory of the AutoTrack installation directory and click **Add** to add it to the list. For example, if you installed AutoTrack to the default directory you should browse to `C:\PROGRAM FILES\AUTOTRACK\LOADERV8\ (LOADER\` on versions prior to V8) and click **Add**.

Important

*If you enter the path manually using the **Edit** button, then note the backslash at the end of the path. This is critical.*

8. Click **Done** to close the box. This will ensure that AutoTrack will run in MicroStation but it will not be listed in **Available Applications**.
9. **To make AutoTrack available in this workspace...**
Click on **Visible MDL Applications** from the edit box at the top right and click the **Select** button. Browse to the `LOADERV8` subdirectory of the AutoTrack installation directory (`LOADER\` on versions prior to V8) and click **Add** to add it to the list. For example, if you installed AutoTrack to the default directory on MicroStation V8 you should browse to `C:\PROGRAM FILES\AUTOTRACK\LOADERV8\` and click **Add**.

Important

*If you enter the path manually using the **Edit** button, then note the backslash at the end of the path. This is critical.*

10. Click **Done** to close the box. This will make AutoTrack visible to you while running MicroStation but will not load it automatically.
11. Click **OK** to close the Configuration dialog and allow the system to recognise the new search directories.

12. Now reopen the Configuration dialog by selecting **Configuration** from the **Workspace** menu.
13. Select the category **Design Applications**.
14. **To make AutoTrack autoload in this workspace...**
Look for ATRACK in the list of **Available Applications**. Highlight the entry and click the **Add** button to add it to the list of **Applications to Load**. This will make AutoTrack load automatically when you start MicroStation with this workspace.
15. Click **OK** to close the Configuration dialog.
16. Restart MicroStation with this user and **AutoTrack** should be on the **Applications** menu and the toolbar should be visible.
17. Repeat the above to configure other workspaces as required.
18. Select **MX Menu** from the MX drop down menu to redisplay the MX menus if necessary.

Configuring BricsCAD manually

Note

Registry changes made by either of the following 'manual' methods will not be removed when you uninstall the product and hence we recommend that you allow Setup to configure your Bricscad system for you.

If you chose not to allow Setup to configure your copy of BricsCAD then proceed as follows...

1. Run AutoTrack from the Start Programs menu which will load BricsCAD and AutoTrack. This will configure your system and you should then be able to see AutoTrack on your BricsCAD menu bar. Henceforth, however you run BricsCAD, AutoTrack should appear on the menu bar.

Alternatively for all versions of BricsCAD...

1. Run BricsCAD as you normally do.
2. Type `APpload` at the command line.
3. If necessary change the **Files of type** box to include `*.BRX`.
4. Click the **File** button and browse to the AutoTrack directory (Normally `C:\PROGRAM FILES\AUTOTRACK`).
5. Highlight the program file appropriate to your CAD system as follows:-

For **BricsCAD v11.1**, load the file `ATRB1101.BRX`.

For **BricsCAD v11.2**, load the file `ATRB1102.BRX`.

For **BricsCAD v11.3**, load the file `ATRB1103.BRX`.

For **BricsCAD v11.4**, load the file `ATRB1104.BRX`.

For **BricsCAD v12.1**, load the file `ATRB1201.BRX`.

For **BricsCAD v12.2**, load the file `ATRB1202.BRX`.

6. Back in the Load Application Files dialog click the **Load** button and then close the Load Application Files dialog.
7. Type `AUTOTRACK` on the command line. AutoTrack will be loaded and your CAD system will be configured for use.

Resolving hardware lock problems

The **Hardware Lock Wizard** starts automatically to attempt to resolve hardware lock problems detected whilst running AutoTrack. The wizard should be self-explanatory but in the unlikely event that it is unable to solve the problem please contact Savoy Computing Services for assistance.

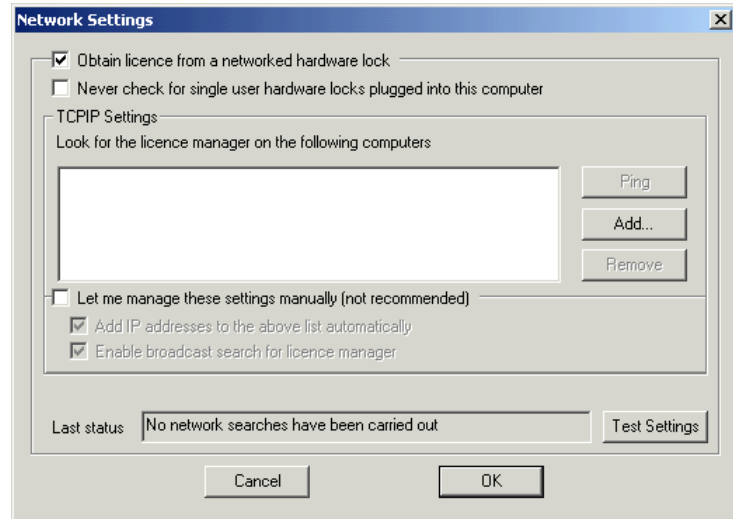
The **Hardware Lock Manager** may be run independently of AutoTrack from the Start, Programs, AutoTrack program folder. This may be necessary if you are installing an update or if you just wish to check the status of your hardware locks.

Running the Licence Manager on the same computer as AutoTrack

AutoTrack can now safely be run on the same computer as the Licence Manager. However, you might need to add the "loopback" IP address to the list of IP addresses to search. This is because machines listening out for broadcast messages sometimes do not respond if the request is local.

To add the "loopback" address

1. Select **Hardware Lock Manager** from the Start, Programs, AutoTrack menu. The Hardware Lock Manager will appear.
2. Click the **Configure Network Settings** button. The Network Settings screen will appear.



Network Settings dialog

3. Click **Configure Network Settings** and add 127.0.0.1 to the list of searched IP addresses.
4. Click the **Test Settings** button to check that all is well. If not then refer to [Identifying and resolving problems](#).

Running the Licence Manager on a remote computer

AutoTrack may report one of two errors when it runs:-

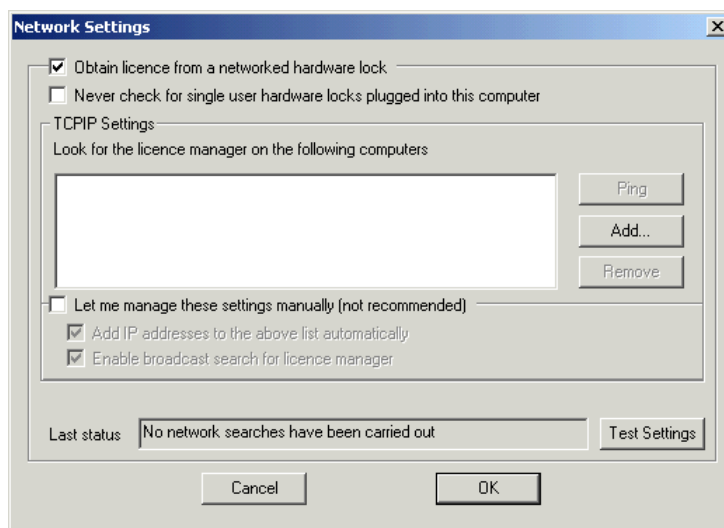
1. No Free Licences Found.
2. No Licence Manager Found.

Message 1 means that there is not a problem, the licence manager has been found BUT there are no available licences, try again later.

Message 2 means that there is a problem. Refer to the next section, [Identifying and resolving problems](#) to fix it.

Identifying and resolving problems

1. Select **Hardware Lock Manager** from the Start, Programs, AutoTrack menu. The Hardware Lock Manager will appear.
2. Click the **Configure Network Settings** button. The Network Settings screen will appear.



Network Settings dialog

3. The **Last Satus** field should indicate the problem. Likely values include:-

15 - No Active NetHASP licence Manager was found

This message means that the licence manager could not be found. To fix this, click the **Add** button and add the IP address of the licence manager computer. This should only be needed if the licence manager is running on a different subnet to the application, i.e. a WAN copy. Having added the IP address, click the **Test Settings** button to check that it now works.

If after adding the IP address, the computer is still unable to find the licence manager, then you may have a firewall preventing the system from working. To verify this we suggest that you temporarily disable the firewall and click on the **Test Settings** button again.

Note

The NetHASP licence manager that we use is not compatible

with the newer HASPSRM licence manager and cannot co-exist on the same server.

155 - LM old version was found

This message means that the licence manager has been found BUT that it is an old version and needs upgrading. To fix this, download the latest version of the licence manager (v8.32.5.40 at the time of writing) from our web site (www.savoy.co.uk). Go to the **Downloads** page and select **3rd party software and links**. Uninstall the current version from the licence manager machine and install the new version **as a service**. Note that upgrading the licence manager will NOT stop older versions of AutoTrack from running. Note also that during the upgrade process the licence manager machine may need to be re-booted.

129 - NetHASP key is not connected to the NetHASP Licence Manager

This message means that the only licence manager found does not have a AutoTrack key attached. To fix this, make sure that the key is attached and then carry out the steps to add the IP address of the actual server outlined in the solution to error 15 about.

133 - Number of stations exceeded

This message means that the licence manager has been found but all the licences are in use. Try again later, or use the Licence Monitor to see who is using the licences and get someone to logout.

Technical Support

You may telephone Savoy Computing Services anytime during normal UK working hours on +44(0)1580 720 011. Alternatively you may fax us on +44(0)1580 720 022.

Normal working hours are 9am to 5.30pm GMT, Monday to Friday, except Bank and National Holidays.

If it's out of office hours then you might like to try our web site on which we post details of any known problems and how to work around them. The site can be accessed at www.savoy.co.uk and you can email us at support@savoy.co.uk. Both of these are available from the AutoTrack drop down menu.

Finally, you can contact us by post at Savoy Computing Services Ltd., Clermont House, High Street, Cranbrook, Kent, TN17 3DN, England.

Starting AutoTrack

AutoTrack can be run from within an AutoCAD or MicroStation session, from the taskbar **Start, Programs** menu or from a desktop icon. In future, when this manual refers to AutoTrack it is using the generic term and what each user will see depends on what version they are licenced to use.

Running stand-alone AutoTrack



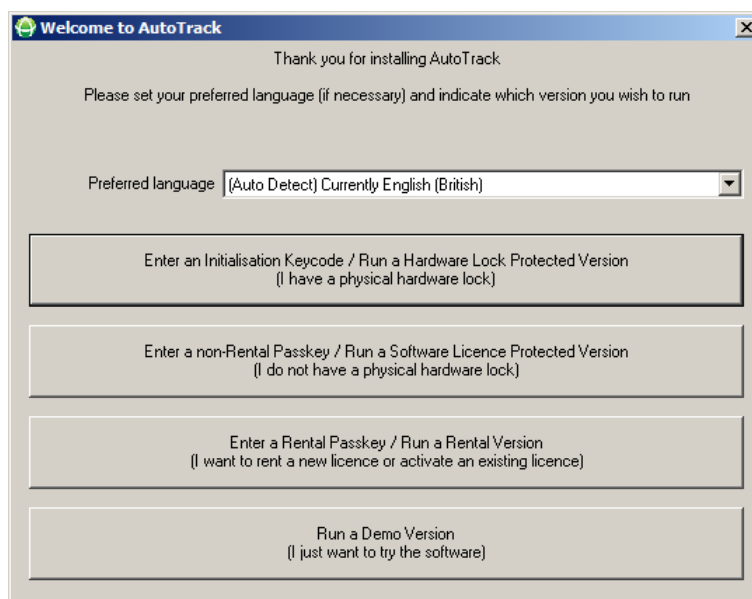
Start button

2. Click on the **Start** button on the Taskbar and select **AutoTrack for SavoyCAD** from the Programs, AutoTrack menu or click on the desktop icon **AutoTrack for SavoyCAD**.
3. The first time the software is run, if AutoTrack cannot find a valid licence, the Welcome dialog will appear with options to run a full, rental or demo version. Select the required version.
4. If you are licenced only to use the Templates Standard version or have chosen to evaluate this product then you will see the first page of the Template Wizard.

In all other versions you will be placed in the SavoyCAD editor. AutoTrack should be visible on the top menu bar and the toolbar should also be visible.

Welcome dialog ⁽¹⁷⁰⁰⁾

The Welcome dialog appears the first time the program is run, whenever AutoTrack fails to find a valid licence or following a master reset.



5.

Welcome dialog

1. By default, the language is detected automatically based upon your computer settings. However, if you would prefer to use a different language select it from the **Preferred Language** drop down list.
2. If you have purchased AutoTrack and have a USB or parallel dongle then simply plug it in and click **Enter and Initialisation Keycode / Run a Hardware Lock Protected Version**.

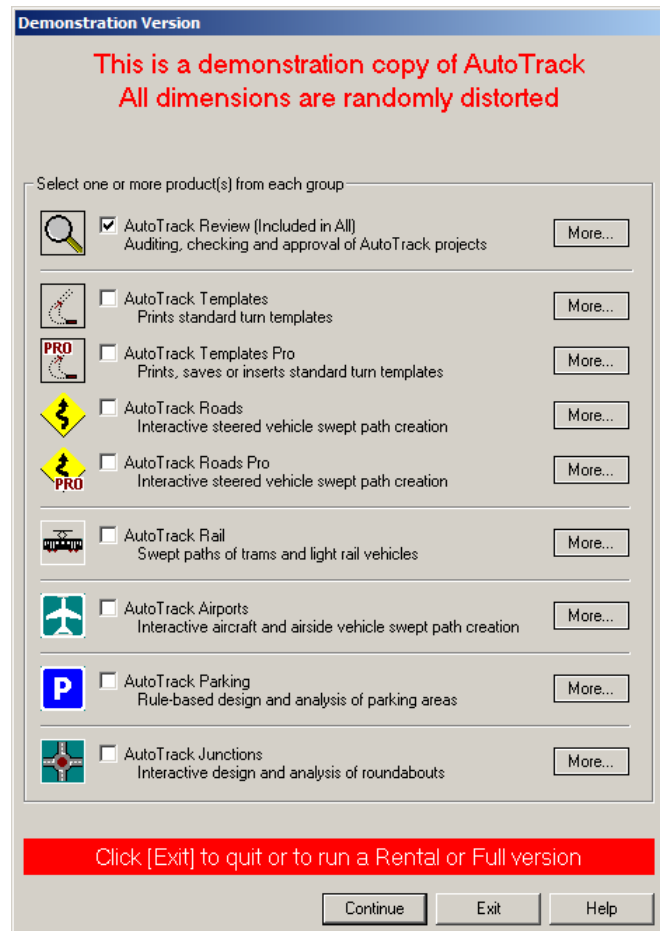
If you have not yet initialised the dongle you will be prompted to enter the Initialisation Code. (On network versions you may need to edit your Network Settings to tell AutoTrack where to look for the dongle)

If the dongle you have plugged in has already been initialised AutoTrack should just run.

3. If you have purchased AutoTrack and do **NOT** have a hardware lock then click **Enter a non-Rental Passkey / Run a Software Licence Protected Version**. The [Activate Licence dialog](#) ⁽¹⁸⁴⁰⁾ will appear.
4. If you want to rent a copy of AutoTrack or receive a rental licence from a colleague, click **Enter a Rental Passkey / Run Rental Version**. The [Rental Version dialog](#) ⁽¹⁸²⁰⁾ will appear.
5. If you simply want to try out the software click **Run a Demo Version**. The [Demonstration Version dialog](#) ⁽¹⁸⁰⁰⁾ will appear.

Demonstration Version dialog ⁽¹⁸⁰⁰⁾

This dialog only appears if you have opted to run a demonstration copy of AutoTrack. It allows you to select and change the product you wish to evaluate.

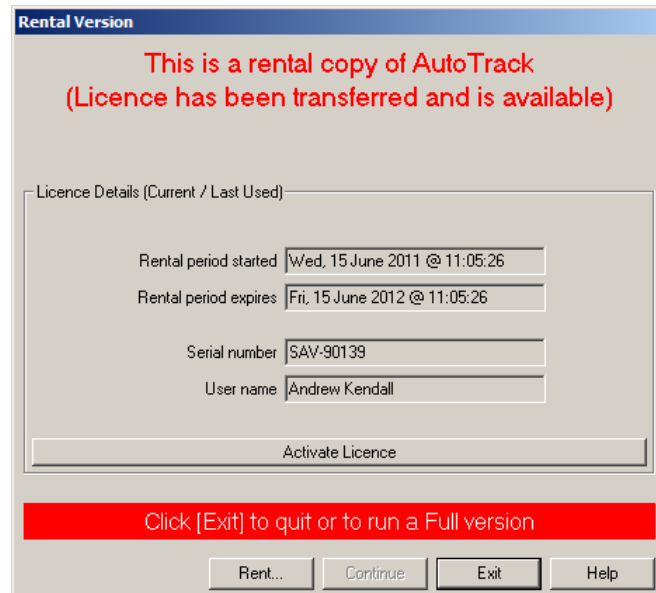


Demonstration Version dialog

1. Select the product(s) that you wish to evaluate.
2. To evaluate the selected product(s) click **Continue**.
3. To quit or to upgrade to a rental or full version, click **Exit** which will display the [Welcome dialog](#) ⁽¹⁷⁰⁰⁾.

Rental Version dialog ⁽¹⁸²⁰⁾

This dialog only appears if you are using a rented copy of AutoTrack. Rental copies are managed by a licence and the text at the top indicates the status of that licence. The licence is installed on and applies to only one computer at a time but can be moved between computers as often as you wish.

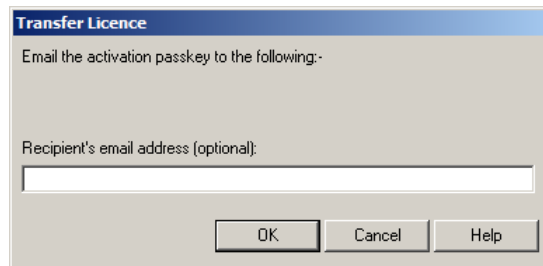


Rental Version dialog

1. If the licence is valid then click **Continue** to use the software.
2. If you have a rental licence on your computer then you may move the rental licence to another computer by clicking **Transfer licence to another computer**. The [Transfer Licence dialog ^{\(1850\)}](#) will appear.
3. If you do not currently have a rental licence on your computer you can retrieve and activate a transferred licence by clicking **Activate licence**. The [Activate Licence dialog ^{\(1840\)}](#) will appear.
4. To start a new rental click **Rent**. The AutoTrack Rental Express wizard will appear for you to purchase time. When this has finished you will be returned to the Rental Version dialog and you should then click **Continue** to use the software.
5. To renew or extend an existing rental click **Extend**. The AutoTrack Rental Express wizard will appear for you to purchase more time. When this has finished you will be returned to the Rental Version dialog and you should then click **Continue** to use the software.
6. To quit or upgrade to a full version click **Exit** which will display the [Welcome dialog ^{\(1700\)}](#).

Transfer Licence dialog ⁽¹⁸⁵⁰⁾

This dialog will appear when you opt to transfer an AutoTrack software licence (rental or full) to another computer.

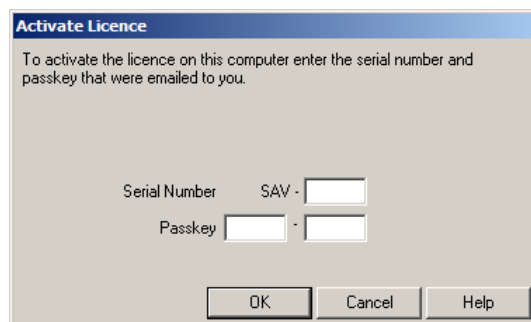


Transfer Licence dialog

1. If you wish to advise a co-worker that this AutoTrack licence is now available enter their email address here. Your colleague will receive an email with details of how to retrieve and activate the licence on their computer. To email multiple users enter their email addresses separated by semi-colons (;). Click **OK**.
2. Your serial number and a passkey will be displayed; use these to activate the licence on any other computer.

Activate Licence dialog ⁽¹⁸⁴⁰⁾

This dialog will appear when you opt to activate a software licence (rental or full).



Activate Licence dialog

1. Enter the serial number and passkey provided by the person transferring the licence. Click **OK**.
2. If you cannot enter the supplied code, or if it is rejected, check that you are using the correct startup option - if you have a USB or parallel hardware lock you should click **Cancel** to return to the [Welcome dialog ^{\(1700\)}](#) and select the correct option.

Note

The original purchaser and anybody who extends the licence period will be emailed each time the licence is transferred. This is for information only and helps ensure that they are able to locate the licence.

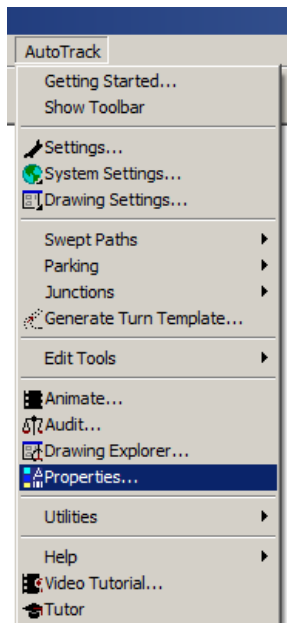
Running AutoTrack in AutoCAD

AutoTrack can either be run from within an AutoCAD session or from the Taskbar Start Programs menu.

To run AutoTrack from the Taskbar Start Programs Menu

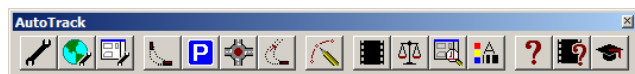


Start button



AutoTrack menu

1. Click on the **Start** button on the Taskbar and select **AutoTrack for AutoCAD 2012** (or your alternative CAD system) from the Programs, AutoTrack menu or click on the desktop icon **AutoTrack for AutoCAD 2012**.
2. The first time the software is run, if AutoTrack cannot find a valid licence, the [Welcome dialog](#) ⁽¹⁷⁰⁰⁾ will appear with options to run a full version (hardware lock version), activate a software licence (software locked version), run a rental or a demo version.
3. If you are running a demo copy then you will see the [Demonstration Version dialog](#) ⁽¹⁸⁰⁰⁾. Select which product you wish to evaluate and click **Continue**. If necessary your menus will be reconfigured.
4. AutoTrack paths are only visible to non-AutoTrack users if proxy graphics have been saved with the drawing (for more information, refer to [Viewing AutoTrack paths in AutoCAD if you don't have AutoTrack](#)). In order for these proxy graphics to be saved, several AutoCAD system variables need to be set correctly. If they are incorrect when you start AutoTrack they will be changed and you will be advised on the command line.
5. You will now be placed in the AutoCAD drawing editor and the AutoTrack menu and toolbar should be visible.



AutoTrack toolbar (appearance varies)

6. If the toolbar is not visible select **Show Toolbar** from the AutoTrack drop down menu.

To run AutoTrack from within AutoCAD

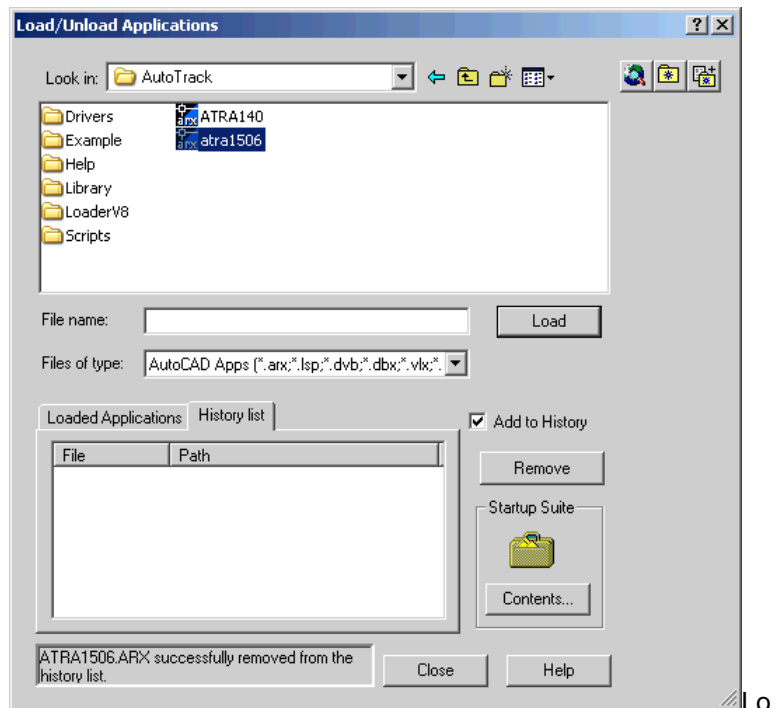
1. Run AutoCAD as you normally would.
2. If your system has been set up correctly AutoTrack should be on the top menu bar. AutoTrack is not yet loaded but will be as soon as you select an AutoTrack command. If the toolbar is not visible then you can select **Show Toolbar** from the AutoTrack drop down menu to display it.
3. Click any AutoTrack button to load AutoTrack. If you are running a network version for the first time, you may get a Hardware Lock warning. Just confirm that you are running a network version and proceed. If AutoTrack fails to find the hardware lock, edit your Network Settings and enter the IP address of the Licence Server.

Note

By default only the main AutoTrack toolbar is enabled with the other functions available as flyouts. If you prefer to work with the flyouts permanently displayed then click the relevant main toolbar buttons to display them and leave them open when you close AutoCAD. Alternatively on versions of AutoCAD prior to 2006 you may go to View, Toolbars and check the AutoTrack toolbars that you require.

To load and run AutoTrack for AutoCAD (except Civil 3D 2010 or later) manually

1. Run AutoCAD as you normally would.
2. Select **Load Application** from the **Tools** menu in AutoCAD or type **APPLOAD** at the command line. The Load Application dialog will appear. The dialog shown is for AutoCAD 2002 but other platforms are similar.



Load Application dialog (AutoCAD 2002)

3. Browse to the AutoTrack application directory and select the ARX file appropriate to your CAD system as follows:-

AutoCAD R14 and derivatives use ATRA140.ARX

AutoCAD 2000/2000i and derivatives use ATRA150.ARX

AutoCAD 2002 and derivatives use ATRA1506.ARX

AutoCAD 2004 and derivatives use ATRA160.ARX

AutoCAD 2005 and derivatives use ATRA161.ARX

AutoCAD 2006 and derivatives use ATRA162.ARX

AutoCAD 2007 and derivatives use ATRA170.ARX

AutoCAD 2008 (32-bit) and derivatives use ATRA171.ARX

AutoCAD 2008 (64-bit) and derivatives use ATRA17164.ARX

AutoCAD 2009 (32-bit) and derivatives use ATRA172.ARX

AutoCAD 2009 (64-bit) and derivatives use ATRA17264.ARX

AutoCAD 2010 (32-bit) and derivatives use ATRA180_ARX.ARX

AutoCAD 2010 (64-bit) and derivatives use
ATRA18064_ARX.ARX

AutoCAD 2011 (32-bit) and derivatives use ATRA181_ARX.ARX

AutoCAD 2011 (64-bit) and derivatives use
ATRA18164_ARX.ARX

AutoCAD 2012 (32-bit) and derivatives use ATRA182_ARX.ARX

AutoCAD 2012 (64-bit) and derivatives use
ATRA18264_ARX.ARX

AutoCAD 2013 (32-bit) and derivatives use ATRA190_ARX.ARX

AutoCAD 2013 (64-bit) and derivatives use
ATRA19064_ARX.ARX

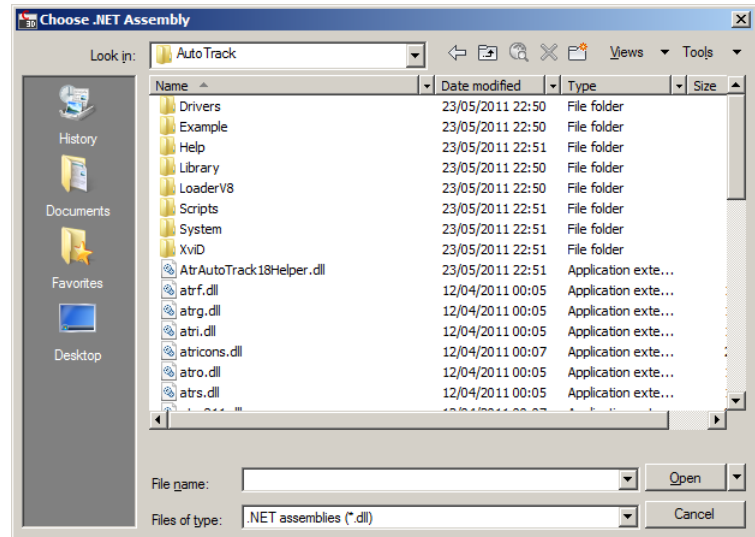
4. Click the **Load** button and close the dialog. AutoTrack will load.
5. Now type **AUTOTRACK** on the command line.
6. If you have installed a demo copy then you will see the [Demonstration Version dialog](#)⁽¹⁸⁰⁰⁾. Select which product you wish to evaluate and click **Continue**. If necessary your menus will be reconfigured.
7. AutoTrack should now be visible on the top menu and the toolbar should also be visible. If the toolbar is not visible then you can select **Show Toolbar** from the AutoTrack drop down menu to display it.
8. Click any AutoTrack button to load AutoTrack. If you are running a network version for the first time, you may get a Hardware Lock warning. Just confirm that you are running a network version and proceed. If AutoTrack fails to find the hardware lock edit your Network Settings and enter the IP address of the Licence Server.

Note

By default only the main AutoTrack toolbar is enabled with the other functions available as flyouts. If you prefer to work with the flyouts permanently displayed then click the relevant main toolbar buttons to display them and leave them open when you close AutoCAD. Alternatively on versions of AutoCAD prior to 2006 you may go to View, Toolbars and check the AutoTrack toolbars that you require.

To load and run AutoTrack for AutoCAD Civil 3D 2010 or later manually

1. Run AutoCAD as you normally would.
2. Type **NETLOAD** at the command line. The **Choose .NET Assembly** dialog will appear. The dialog shown is for AutoCAD Civil 3D 2012 but other platforms are similar.



Choose .NET Assembly dialog (AutoCAD Civil 3D 2012)

3. Browse to the AutoTrack application directory and select the .NET file appropriate to your CAD system as follows:-

AutoCAD Civil 3D 2010 (32-bit) and derivatives use
ATRC180_ARX.DLL

AutoCAD Civil 3D 2011 (32-bit) and derivatives use
ATRC181_ARX.DLL

AutoCAD Civil 3D 2011 (64-bit) and derivatives use
ATRC18164_ARX.DLL

AutoCAD Civil 3D 2012 (32-bit) and derivatives use
ATRC182_ARX.DLL

AutoCAD Civil 3D 2012 (64-bit) and derivatives use
ATRC18264_ARX.DLL

AutoCAD Civil 3D 2013 (32-bit) and derivatives use
ATRC190_ARX.DLL

AutoCAD Civil 3D 2013 (64-bit) and derivatives use
ATRC19064_ARX.DLL

4. Click the **Open** button and close the dialog. AutoTrack will load.
5. Now type **AUTOTRACK** on the command line.
6. If you have installed a demo copy then you will see the [Demonstration Version dialog](#) ⁽¹⁸⁰⁰⁾. Select which product you wish to evaluate and click **Continue**. If necessary your menus will be reconfigured.

7. AutoTrack should now be visible on the ribbon. It will also be on the menu or toolbar if you have the menu visible. If you prefer to use toolbar you can select **Show Toolbar** from the AutoTrack drop down menu to display it.
8. Click any AutoTrack button to load AutoTrack. If you are running a network version for the first time, you may get a Hardware Lock warning. Just confirm that you are running a network version and proceed. If AutoTrack fails to find the hardware lock edit your Network Settings and enter the IP address of the Licence Server.

Viewing AutoTrack paths in AutoCAD if you don't have AutoTrack

In the AutoCAD version of AutoTrack the path entity is a custom object that is calculated and drawn by AutoTrack. Systems must therefore have AutoTrack installed in order to update and maintain these objects.

AutoCAD caters for drawings that contain custom objects without their authoring application being present using a system called proxy graphics. Proxy graphics are similar to an anonymous block containing an exploded version of the custom object. However, the proxy graphics will only be visible if certain system variables are set correctly on both the authoring and receiving systems.

Authoring system

- In order for proxy graphics to be saved with the drawing the authoring system must have the system variable `PROXYGRAPHICS` set to 1 and `INDEXCTRL` set to 3. When you start AutoTrack these are set along with `PROXYSHOW` set to 1 and `DEMANDLOAD` set to 3.

Receiving system

- If the receiving system has AutoTrack installed and the startup system setting **Load AutoTrack when opening drawing containing AutoTrack data** is switched on, AutoTrack data will be visible just like any other entity. Likewise, if the [AutoCAD object enabler](#) is installed then any AutoTrack data will be visible. For more details of the object enabler refer to [AutoCAD object enabler](#).
- If the receiving system either does not have AutoTrack installed, or has AutoTrack installed but **Load AutoTrack when opening drawing containing AutoTrack data** is switched off, AutoCAD will report the missing application only if the system variable `PROXYNOTICE` is set to 1. This prompt may give the user options **Show proxy graphics** and/or **Do not show proxy graphics**. Note however that if proxy graphics have not been saved with the drawing (see above) then even opting to **Show proxy graphics** will not make them visible. Note also that if the default was **Do not show proxy graphics** and you select **Show proxy graphics** then you will need to issue a `REGEN` in order to see the objects.
- If you decide not to show the proxy graphics at the start then setting `PROXYSHOW` to 1 will make them visible after the next `REGEN` if they are saved in the drawing.

To run AutoTrack from within MicroStation...

1. Run MicroStation as you normally would.
2. Create and/or open a drawing.
3. If you have installed a demo copy then you will see the [Demonstration Version dialog](#)⁽¹⁸⁰⁰⁾. Select which product you wish to evaluate and click **Continue**. If necessary your menus will be reconfigured.
4. If your system has been set up correctly AutoTrack should be on the **Applications** menu. The AutoTrack tool frame may also be visible. AutoTrack is not yet loaded but will be as soon as you select an AutoTrack command.
5. Click any AutoTrack button to load AutoTrack. If you are running a network version for the first time, you may get a Hardware Lock warning. Just confirm that you are running a network version and proceed. If AutoTrack fails to find the hardware lock edit your Network Settings and enter the IP address of the Licence Server.

Note

By default only the main AutoTrack tool frame is enabled with the other functions available as flyouts. If you prefer to work with the flyouts permanently displayed then go to Tools, Toolboxes and check the AutoTrack toolbars that you require.

To load and run AutoTrack for MicroStation manually...

1. Run MicroStation as you normally would.
2. If you are running Bentley MX the Utilities menu may not be visible. Select **CAD Menu** from the File drop down menu.
3. Select MDL Applications from the Utilities menu.
4. Look for **ATRACK** in the list of Available Applications.
5. If the application is listed then highlight it and click **Load**. Close the MDL Applications dialog.
6. If the application is not listed then click the **Browse** button and look in the `LOADER` subdirectory (`LOADERV8` on MicroStation V8) of the AutoTrack installation directory for the file `ATRACK.MA`. Highlight the file and click **OK** followed by **Load**.
7. If you have installed a demo copy then you will see the [Demonstration Version dialog](#)⁽¹⁸⁰⁰⁾. Select which product you wish to evaluate and click **Continue**. If necessary your menus will be reconfigured.
8. AutoTrack should now be visible on the top menu and the toolbar should also be visible.
9. Click any AutoTrack button to load AutoTrack. If you are running a network version for the first time, you may get a Hardware Lock warning. Just confirm that you are running a network version and proceed. If AutoTrack fails to find the hardware lock edit your Network Settings and enter the IP address of the Licence Server.

Note

By default only the main AutoTrack tool frame is enabled with the other functions available as flyouts. If you prefer to work with the flyouts permanently displayed then go to Tools, Toolboxes and check the AutoTrack toolbars that you require.

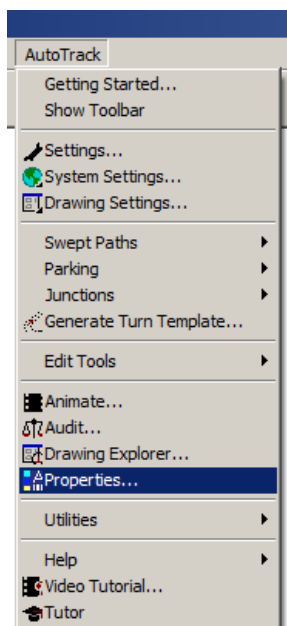
Running AutoTrack in BricsCAD

AutoTrack can either be run from within an AutoCAD session or from the Taskbar Start Programs menu.

To run AutoTrack from the Taskbar Start Programs Menu

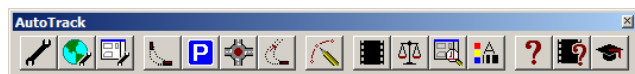


Start button



AutoTrack menu

1. Click on the **Start** button on the Taskbar and select **AutoTrack for BricsCAD 11** (or your alternative CAD system) from the Programs, AutoTrack menu or click on the desktop icon **AutoTrack for BricsCAD 11**.
2. The first time the software is run, if AutoTrack cannot find a valid licence, the [Welcome dialog](#) ⁽¹⁷⁰⁰⁾ will appear with options to run a full version (hardware lock version), activate a software licence (software locked version), run a rental or a demo version.
3. If you are running a demo copy then you will see the [Demonstration Version dialog](#) ⁽¹⁸⁰⁰⁾. Select which product you wish to evaluate and click **Continue**. If necessary your menus will be reconfigured.
4. AutoTrack paths are only visible to non-AutoTrack users if proxy graphics have been saved with the drawing (for more information, refer to [Viewing AutoTrack paths in AutoCAD if you don't have AutoTrack](#)). In order for these proxy graphics to be saved, several AutoCAD system variables need to be set correctly. If they are incorrect when you start AutoTrack they will be changed and you will be advised on the command line.
5. You will now be placed in the AutoCAD drawing editor and the AutoTrack menu and toolbar should be visible.



AutoTrack toolbar (appearance varies)

6. If the toolbar is not visible select **Show Toolbar** from the AutoTrack drop down menu.

To run AutoTrack from within BricsCAD

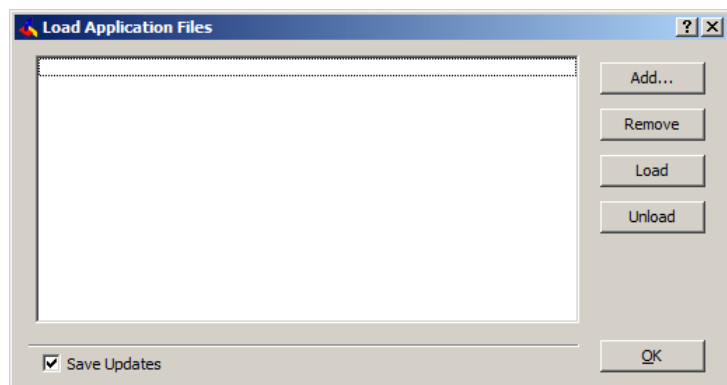
1. Run BricsCAD as you normally would.
2. If your system has been set up correctly AutoTrack should be on the top menu bar. AutoTrack is not yet loaded but will be as soon as you select an AutoTrack command. If the toolbar is not visible then you can select **Show Toolbar** from the AutoTrack drop down menu to display it.
3. Click any AutoTrack button to load AutoTrack. If you are running a network version for the first time, you may get a Hardware Lock warning. Just confirm that you are running a network version and proceed. If AutoTrack fails to find the hardware lock, edit your Network Settings and enter the IP address of the Licence Server.

Note

By default only the main AutoTrack toolbar is enabled with the other functions available as flyouts. If you prefer to work with the flyouts permanently displayed then click the relevant main toolbar buttons to display them and leave them open when you close BricsCAD.

To load and run AutoTrack for BricsCAD manually

1. Run BricsCAD as you normally would.
2. Select **Load Application** from the **Tools** menu in BricsCAD type **APPLoad** at the command line. The Load Application Files dialog will appear. The dialog shown is for BricsCAD v11 but other platforms are similar.



Load Application Files dialog (BricsCAD)

3. Browse to the AutoTrack application directory and select the BRX file appropriate to your CAD system as follows:-

BricsCAD v11.1 use ATRB1101.BRX

BricsCAD v11.2 use ATRB1102.BRX

BricsCAD v11.3 use ATRB1103.BRX

BricsCAD v11.4 use ATRB1104.BRX

BricsCAD v12.1 use ATRB1201.BRX

BricsCAD v12.2 use ATRB1202.BRX

4. Click the **Load** button and close the dialog. AutoTrack will load.
5. Now type **AUTOTRACK** on the command line.
6. If you have installed a demo copy then you will see the [Demonstration Version dialog](#)⁽¹⁸⁰⁰⁾. Select which product you wish to evaluate and click **Continue**. If necessary your menus will be reconfigured.
7. AutoTrack should now be visible on the top menu and the toolbar should also be visible. If the toolbar is not visible then you can select **Show Toolbar** from the AutoTrack drop down menu to display it.

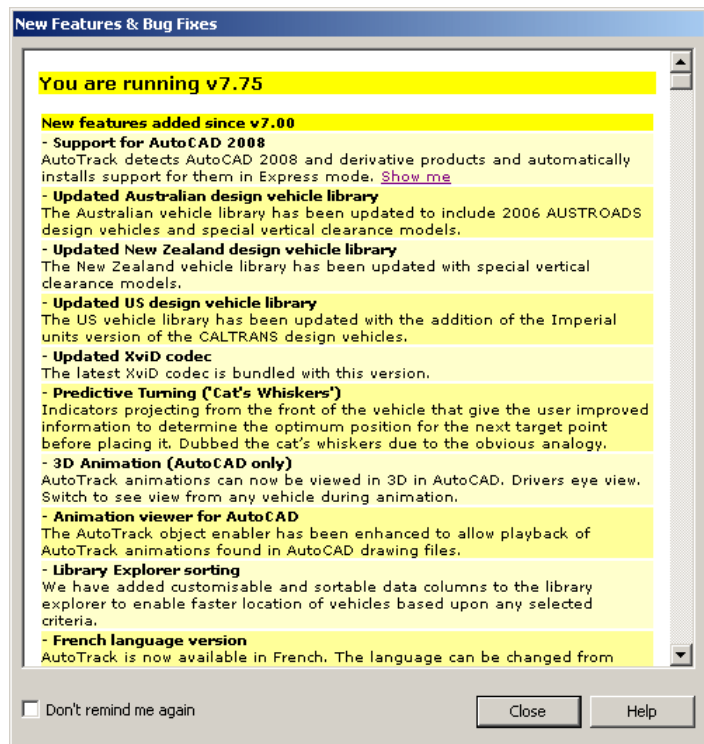
8. Click any AutoTrack button to load AutoTrack. If you are running a network version for the first time, you may get a Hardware Lock warning. Just confirm that you are running a network version and proceed. If AutoTrack fails to find the hardware lock edit your Network Settings and enter the IP address of the Licence Server.

Note

By default only the main AutoTrack toolbar is enabled with the other functions available as flyouts. If you prefer to work with the flyouts permanently displayed then click the relevant main toolbar buttons to display them and leave them open when you close BricsCAD.

The New Features dialog (1975)

If you have an internet connection then you will see the New Features dialog when you run AutoTrack. If you do not see the dialog then it may be because it has been switched off. In this case select **Show New Features** from the AutoTrack, Help drop down menu.

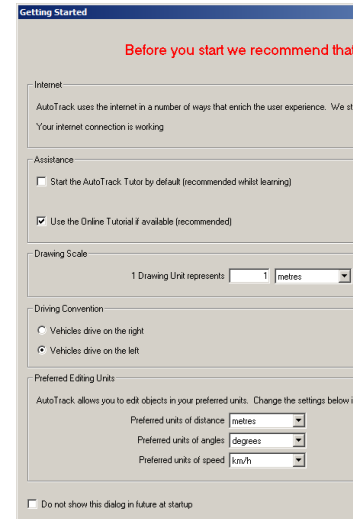


New Features dialog

1. If you are installing AutoTrack for the first time the main window lists the new features add to this major release, e.g. if you are installing v8.9 it will list all new features from version 8.0.
2. If you have just updated from an earlier version the main window lists the new features available since the last version you used. Thus if you update from version 7.0 it will list all new features from that version.
3. If you don't want to be reminded of new features again then tick **Don't remind me again**. You can always see check the list again by selecting **Show New Features** from the AutoTrack, Help drop down menu.
4. Some of the items may include links to video clips. To view these simply click the **Show me** link.

The Getting Started dialog (not AutoTrack Templates) (1900)

For those who use AutoTrack infrequently we have created the Getting Started dialog. By default this appears when you first run the program from the desktop icon.



6.

Getting Started dialog

1. At the top of the screen is the Internet status. AutoTrack provides extra functionality via the internet and we strongly recommend that it is enabled. If the status indicates that there is a problem then click on the **System Settings** button to make changes.
2. Below that is the Assistance section. The AutoTrack Tutor is not new but now you can have it run at startup; tick **Start the AutoTrack Tutor by default**. There may be a static tutorial provided with the product but for the most up to date information and advice we recommend that you access the online tutorial by ticking **Use the Online Tutorial if available**. The tutorial will run in your preferred browser and the window may need to be resized to view the page format. Click on the **Tutor** button or **Video Tutorial** button to start these features.
3. Below that is possibly the single most important settings, **Drawing Scale**. Enter your preferred scale or click the **Drawing Settings** button to configure other drawing settings.
4. The **Driving Convention** is set based upon your regional settings. You may change it if it is wrong.
5. The **Preferred Editing Units** control the units in which data is displayed. If you also wish to view or change the Reporting Units then click the **Drawing Settings** button.
6. When you become proficient with AutoTrack you may wish to disable the Getting Started dialog by ticking the box **Do not show this dialog in future at startup**. You can always display it again by selecting **Getting Started** from the AutoTrack drop down menu.



System Settings button



Tutor button



Video Tutorial button



Drawing Settings button

A few do's and don'ts

We have designed AutoTrack to support and interact appropriately with as many of the features of the host CAD system. However, there are a few recommended do's and don'ts that you should bear in mind.

AutoCAD version

- **Do not** save only exploded AutoTrack paths if you are likely to need to edit them in the future.

MicroStation version

- **Do not** save only exploded AutoTrack paths if you are likely to need to edit them in the future.
- **Do not** unlock or edit the AutoTrack cells using other than AutoTrack. Each AutoTrack path is held in one or more specially named locked cells (belonging to the same graphic group) to prevent it being manipulated such that the results are inconsistent with the vehicles capabilities. Unlocking or editing cells will have unpredictable results.
- **Do not** try to edit AutoTrack data in reference drawings - AutoTrack can only access data in the master drawing.

Introduction

AutoTrack's power and range of features has grown over the years and it is now no longer a single program but a suite of vehicle swept path prediction programs. It was originally developed to meet the need for a means of accurately predicting the space needed to manoeuvre large articulated vehicles. Nowadays, the program can model almost any conceivable vehicle type including vehicles with complex steering arrangements, aircraft and now, following the recent integration of AutoTram, light rail vehicles.

What AutoTrack can and can't do

Capabilities

AutoTrack integrates completely with your CAD system adding functions that allow you to model vehicle behaviour. You simply select from a wide variety of predefined vehicles and 'drive' them through required manoeuvres on-screen. If the required vehicle is not already defined then facilities are provided to define the vehicle and add it into one of the existing libraries for future use.

Note

If you are a new AutoTrack user, or have migrated from a previous version, we strongly recommend that you view the demonstration video supplied on the AutoTrack CD to gain an overview of the product. Then, for a hands-on introduction to using the program refer to the section entitled Worked Example.

Features

A number of features have been incorporated to simplify the user's task in "driving" a vehicle in this manner without the benefit of the more direct sensory feedback that would be experienced driving the vehicle for real.

It should be noted that the aim of the program is to provide accurate swept path predictions for different types of vehicles and not precise simulations of driving conditions for those vehicles. Thus, the controls have been designed with the emphasis on ease of use rather than realism.

AutoCAD Civil 3D 2010 and later

We work hard to ensure that AutoTrack functionality is the same across all platforms as far as we can. However, AutoCAD Civil 3D presents us with an opportunity to enhance the functionality to the benefit of the end user. These special features (only available in version 2010 and later) are made possible by the detailed Civil 3D building information model (BIM) database that identifies lines and shapes and allows us to add intelligence to our AutoTrack objects. For example, Civil 3D surfaces and

feature lines allow us to place our objects on the ground surface. Not only that but we are able to react and update the object when the surface or line changes. These features are discussed in more detail as they occur in the manual.

Limitations

Like any engineering design program, AutoTrack has limitations. In fact, the list of factors that AutoTrack ignores is extensive and includes dynamic effects, wind effects, acceleration and deceleration, sloping road surfaces and slippery road surfaces.

Whilst these factors are by no means irrelevant, if we asked you to supply a weather report, details of the condition of each tyre, a road friction coefficient and full details of the suspension you would probably give up and go back to using templates!

The fact is that AutoTrack is just like any other engineering program in which you design for idealised situations and apply safety factors to allow for real life variations.

This is exactly the way we recommend you use AutoTrack. Use the most onerous vehicles likely in a particular situation and then allow a margin for error on the results. The acceptable margin for error is something for you to assess - if you are lucky it may be the subject of local design guidelines.

Do not expect that just because a particular vehicle in the AutoTrack library can perform a given manoeuvre on your desktop you will be able to replicate it precisely in reality.

Do not assume that any of the AutoTrack defaults are recommendations and if you have a reliable source of data, use it.

It all boils down to USE YOUR ENGINEERING JUDGEMENT.

Migrating from WinTrack

Due to restrictions imposed by Windows Vista support AutoTrack can no longer read WinTrack files directly. If you need to migrate WinTrack files for use with AutoTrack you should install version 7.60 or earlier, open the file and save it. The resulting file supports almost all WinTrack features. Features not supported include:-

- Speed, hands-off and stationery steering reports (planned for a later release)
- Full thickness tyre tread report (although tyre tread reports are read in as normal outer face wheel tracks if there is no outer face report defined)
- Alternative direction symbol shapes (only the chevron shape)
- Automatic grid spacing (however grid spacing may be specified)
- Origin symbol (replaced by axes symbol at bottom left of screen)

Reading pre-v5 AutoTrack libraries

Due to restrictions imposed by Windows Vista support AutoTrack can no longer read library files created using version of AutoTrack prior to version 5. If you need to convert an earlier format library file you should

install version 7.60 or earlier, open the file and save it. The resulting file can be read in all versions of AutoTrack.

How to use AutoTrack

AutoTrack is really very simple to use; in most cases you will simply specify your settings, select a vehicle from one of the many provided, position and orient it on your drawing and then drive it through your drawing on-screen. If you need a vehicle that is not listed then you can create it, add it to your own vehicle library and use it just like those provided.

Each of these is described in detail in the following chapters.

Settings

How you use AutoTrack depends to a large extent upon what you want to do with it. The system is set up with default settings appropriate for a “typical” use. You will need to decide whether these are appropriate for your needs and change them if necessary.

The way a vehicle behaves is controlled partly by the vehicle parameters and partly by the environment in which it is driven. Vehicles once defined should normally be regarded as fixed. The environment settings however can and should be modified to suit your particular situation.

There are various drive modes available each of which can be used interchangeably. Each is appropriate for a particular use and you will need to decide which is best for your needs and indeed this may come down to a simple preference. All but one of the drive modes also have settings that control the way they work.

One of the most frequent causes of problems is that AutoTrack is working in one set of units (say, metres) while your CAD system is working in another (say, millimetres); so before you start work make sure that you set the AutoTrack scale to match your drawing (Refer to Drawing Settings: Scale).

AutoTrack calculates swept paths to a high degree of accuracy based upon the stated algorithms. However, you may wish to allow for the driver error or real world imperfections by modelling a safety or clearance envelope (Refer to Drawing Settings: Reports: Offset Envelope 1).

Modelling rigid vehicles

All drive modes are well suited to modelling rigid vehicles but AutoDrive is likely to give the quickest and best results.

Modelling articulated semi-trailer vehicles

Articulated lorries are best modelled using AutoDrive. Existing users may prefer Manual Drive which requires a degree of skill when reversing. Follow and Script may be appropriate if you are only modelling forwards manoeuvres. If you want to model reverse manoeuvres Script is unlikely to be of much use since it has no intelligence to deal with the over-articulation that will rapidly develop.

Modelling drawbar and multi-trailer vehicles

Multi-trailer vehicles that have more than one articulation point are inherently very unstable when reversing and for this reason they are rarely reversed. We do not encourage the use of AutoTrack to analyse multi-trailer vehicles performing reversing manoeuvres since it can give a false impression of the suitability of the design. Within AutoTrack, AutoDrive will give you good results.

Modelling aircraft

Taxiing aircraft are best modelled using either AutoDrive or Follow. Script may also be appropriate if you want to create templates of well-defined simple manoeuvres.

Follow will be appropriate if you want to model an aircraft following existing apron markings. If you want pilot's eye tracking then you will need to change the Forwards Path Point to Pilot / Driver (Refer to Drawing Settings: Tracking Point). This must be done **before** you start driving. If your vehicle fails to negotiate a turn then you could try lengthening the segment length (Refer to System Settings: Follow Drive). The further the pilot is offset from the effective front axle the greater this value may need to be.

AutoDrive may be more appropriate if you are trying to determine the position of the apron markings. You will probably use the Forwards Arc option in AutoDrive which tries to drive with the minimum turn arcs and only use Forwards Bearing for long straight sections.

Modelling combination steered vehicles

Linkages have little effect on the most appropriate drive mode. However, rear steered vehicles do not have the benefit of Hands-Off in Manual Drive mode or Forwards Bearing in AutoDrive.

It is only possible to link entire axle groups so the best way to model a single linked axle in a multi-axle group is as a self-steered axle. Set the axle group type to **Fixed** and check the **Self-Steered** box on the axle that is linked. By default, with a self steered friction factor of 0.0, the effective axle position will be calculated on the basis of the remaining fixed axles and the wheels on the self-steered axle will turn about the centre of turn of these axles.

Modelling vehicles with pushing tractors

All vehicles must have a single tractor unit but it may be at the front, at the back or indeed, in the middle. In essence the behaviour of such a vehicle travelling forwards is equivalent to the reverse of the vehicle going backwards.

Modelling vehicles with steerable couplings

Some vehicles, notably certain quarrying trucks, have no steerable axles but instead are steered by changing the articulation angle of a coupling. These vehicles can be modelled using the active steerable coupling type.

Modelling Active Hitches

Warehouse vehicles sometimes make use of vehicles with active hitches. Active hitch refers to a rear drawbar axle which is linked to the front axle

or coupling. Vehicles that use this type of axle can only be reversed using Manual Drive.

Development & planning scenarios

AutoTrack may be used not only to test scenarios but also to develop alignments from scratch. Used in this way you may find the need to limit the steering angle. This can be done in several ways but arguably the most useful in a development situation is by turn radius. For example, if you were to adopt a standard curve radius for a residential development; this radius can then be set as the limiting inner wheel radius for all turns and all vehicles.

During the early planning stages of projects you may find that the good old turn template comes into its own. You could use the template wizard to generate templates for important vehicles such as refuse trucks and emergency vehicles and use them to form the basis of your road layouts. As you refine your design you can then use more sophisticated tools to test critical locations. You should bear in mind that turns generated using Script can be edited whereas those generated using the template wizard cannot.

Modelling the effects of super elevation and side friction

AutoTrack now allows you to restrict the turning radius according to super elevation and side friction. This, in conjunction with design speed, means that you can now more accurately predict higher speed paths through junctions or roundabouts. We do however urge caution before modelling high speed manoeuvres using AutoTrack; the dynamics of vehicle motion are too complex for a program of this type to fully model so the fact that AutoTrack can generate a theoretical path does not necessarily mean that it can be driven safely. **USE YOUR ENGINEERING JUDGEMENT.**

Modelling trams and light rail vehicles

You can only model fully rail guided vehicles such as trams using Guided Drive which is available in the light rail version. Generally speaking because the path of the tram is well defined there are fewer options. However because most new tram networks use new tram designs (albeit often heavily based upon existing trams) it is more likely that you will need to define your own vehicles.

Modelling conveyor systems

The Rail version can also be used to model certain types of conveyor systems such as are found in vehicle assembly plants.

Fastest line through roundabouts

Follow can be used to check the fastest line through roundabouts. Define the path through the roundabout as a AutoCAD spline, pline or MicroStation complex chain. Set the design speed to the highest permitted and use Follow to generate a non-editable path. AutoTrack will reduce the speed to the maximum possible. The current version does not take into account acceleration and deceleration but it does allow for dynamic effects.

Checking vertical clearances

The Vertical Clearance drive mode may be used to check ground clearance and / or impacts with overhead features such as bridges. Multiple axles are modelled assuming suspension movement. However, the results should be regarded as approximate since the effects of variations in suspension and loading can have a significant effect.

What's new in version 10?

Support for AutoCAD 2013 and derivatives

AutoTrack detects AutoCAD 2013 and all verticals and automatically installs support for them in Express mode.

Support for MicroStation v8i SS3

AutoTrack detects MicroStation v8i Select Series 3 and automatically installs support for them in Express mode.

Support for BricsCAD 12.2

AutoTrack detects BricsCAD v12.2 and automatically installs support for it in Express mode.

Creation of 3D corridor

Junctions can optionally create and update roadway alignments, profiles and corridor in supported CAD systems. Assemblies are provided for 'out-of-the-box' functionality. A new corridor settings page allows you control default behaviour and save defaults for future sessions.

New Deviation Points

The Blend Points have been supplemented by Deviation Points. Each arm now has the original Blend Point, the point at which the new design meets the existing, and a Deviation Point, the point at which the arm deviates from the selected alignment.

Roundabout crown lines

Junctions can optionally create circulatory area crown lines either as concentric circles or island to island. It can also create the arm crown lines using the Stockdale Method.

Roundabout signage

You can now define non-custom roundabout signs in junction standards. These include Give Way (or Yield), Roundabout Ahead, direction chevrons, etc. The signs are placed automatically but may be adjusted.

Roundabout levels

You can now specify the levels and crossfall at key points on the roundabout and approach arms. This data is used to build the 3D model in supported CAD systems.

Ability to run ARCADY from within AutoTrack

An option has been added to start up **ARCADY** from a button on the AutoTrack menu, toolbar or ribbon.

Ability to run Sign Design Pro from within AutoTrack

An option has been added to start up **Sign Design Pro** from a button on the AutoTrack menu, toolbar or ribbon.

Roundabout reacts to changes in defining lines in MicroStation

The AutoTrack roundabout object reacts to changes in the chosen alignments in MicroStation in the same way that it does already in AutoCAD.

Roundabout visibility cameras

3D animation cameras have been added at all visibility subject locations to allow visibility checking in 3D. Also, the drivers eye view can be set to 'Looking Left' and 'Looking Right'.

New 'watching' cameras

Additional cameras have been added with predefined default viewpoints for watching junctions or parking rows.

Unlimited design vehicles in Junctions

The Design Vehicle pages in the Junction Standard Editor and Junction Properties have been revised and now you can define and use unlimited design vehicles.

Improved crossing presentation

The pedestrian crossing is now drawn with white stripes similar to the requirements of many countries.

Griptips & Glyphs in BricsCAD 12.2

Griptips and glyphs (with varying shapes and colours) are now fully supported in the BricsCAD 12.2 version.

Manual layout

If the theory and algorithms used in AutoTrack are new to you then you may wish to read the section entitled Theory before using the program. Thereafter, the remaining sections cover day-to-day use of the program. We do however strongly recommend that you read the section entitled Worked Example which will give you a fast introduction to the program and get you productive as quickly as possible.

The troubleshooting section deals with some of the more common problems.

Notation conventions

Throughout this manual key depressions are shown enclosed by angle brackets thus enter <F> means type the letter F and <OR> means type the letters O and R.

Menu options or commands are printed in a **bold** font.

Messages displayed by AutoTrack are printed in *italics*.

Text that you should type and filenames are shown in a `courier` font.

All screen images and functionality descriptions are for AutoTrack running on Windows XP. The screen image may vary slightly on other platforms. If functionality is different for other platforms the variations are noted.

Mouse conventions

Windows allows mouse button functionality to be reversed for left handed users. AutoTrack features a similar option. Rather than repeatedly catering for all possible configurations we have adopted the convention of using the default functionality. Thus if you have configured your mouse

for left handed use then for left mouse button read right mouse button and vice versa.

Default values

Throughout the program default values are displayed in red and have an asterisk alongside them. Enter any non-zero value to overwrite the default. Enter zero to reset them to the default.

Getting help

If the user manual is not available try one of the alternatives.

Context sensitive on-line help

The extensive context sensitive on-line help mirrors the manual, but has the powerful windows search facilities. To get help click the **Help** button on any dialog or press **F1**.

Help is also available from the drop down menus:-

Select **Help, AutoTrack Help** to get a structured breakdown of the help text.

Select **Help, About AutoTrack** to check the program module versions.

On-line assistance

If you find what you think is a bug and wish to email support for assistance select **Email Savoy Computing for assistance** from the **Help** menu.

You can check for updates by selecting **Check website for AutoTrack updates** from the **Help** menu.

Help tutor

The AutoTrack Tutor is an AutoTrack help window that is displayed permanently in a convenient location on your desktop. The text updates as you move through the program. You can enable the help tutor at any time by clicking the Tutor button on the AutoTrack toolbar. We recommend that you set it to remain in the foreground at all times.



Tutor button

Online video tutorial

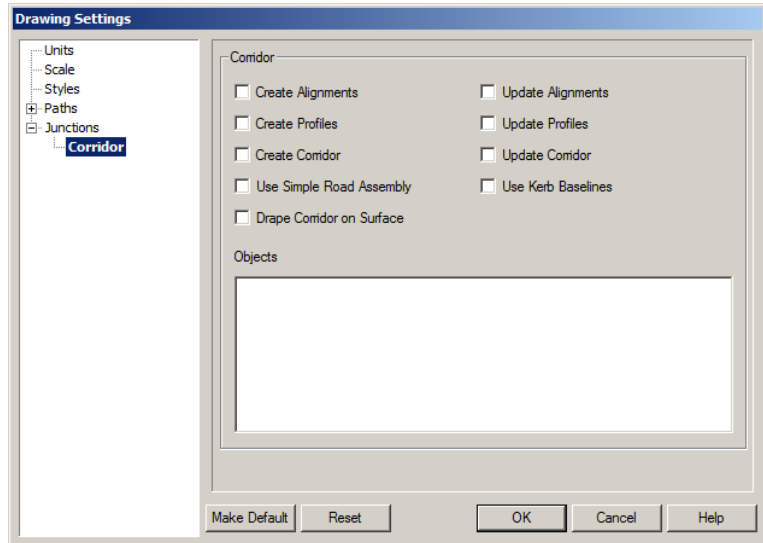
The AutoTrack online video tutorial is a multi-media presentation designed to get you started with AutoTrack quickly. Video clips show you how to use AutoTrack to perform various tasks. It may be viewed as a continuous presentation or you may use the navigation buttons to view selected clips.



Video Tutorial button

If you are running AutoTrack on a supported platform you will have a corridor tab. This defines how the 3D model of the roundabout is built and updated.

1. Expand Junctions in the left hand pane and click Corridor. The Corridor page will appear.



Drawing Settings dialog: Junctions: Corridor

2. The checkboxes in the upper section of the page control how much of the 3D model AutoTrack creates and updates.
3. Tick **Create Alignments** to create horizontal alignments in your CAD system.
4. Tick **Update Alignments** if you want AutoTrack to update the alignments automatically when the geometry changes. This option is only available if AutoTrack created the original alignments, i.e. if **Create Alignments** is ticked.
5. Tick **Create Profiles** to create vertical profiles along the horizontal alignments.
6. Tick **Update Profiles** if you want AutoTrack to update the profiles automatically when the geometry changes. This option is only available if AutoTrack created the original profiles, i.e. if **Create Profiles** is ticked.
7. Tick **Create Corridor** to create a 3D corridor model using default assemblies.
8. Tick **Update Corridor** if you want AutoTrack to update the corridor automatically when the geometry changes. This option is only available if AutoTrack created the original corridor, i.e. if **Create Corridor** is ticked.
9. By default the corridor is built using simple assemblies consisting of just a road surface with no kerbs. This is the case when **Use Simple Road Assembly** is ticked. These assemblies are based upon the Civil 3D **Primary Road Through Intersection** assembly with right and left subassemblies renamed to offside and nearside in accordance with your driving convention.

Untick **Use Simple Road Assembly** to use more complex assemblies for the entry and exit roads. These assemblies are based upon the Civil 3D **Primary Road Part Section – Daylight**

Right (or Left) again with right and left renamed to offside and nearside in accordance with your driving convention.

10. By default the assemblies are inserted on the crown lines and targeted to the nearside kerb and centreline alignments. However under some circumstances it may be desirable to insert them on the nearside kerb alignment. Switch between them with the **Use Kerb Baselines** checkbox.
11. Normally you will probably want to construct the 3D model with calculated profiles; this is the default. To drape the corridor on the surface tick **Drape Corridor on Surface**. With this option enabled, the assemblies take their levels from the original surface profiles rather than the calculated profiles.

Glossary of Terms

Active Hitch

A type of rear axle consisting of a drawbar with the bar facing rearwards linked to the front axle or articulation point (hence 'active').

Actual Wheelbase

The distance between the innermost axles on a tractor, or the distance from kingpin or drawbar pivot point to the innermost rear axle on a drawbar or semi-trailer.

Approach Stopping Sight Distance

The required line of sight on approaching a roundabout. The approaching driver must be able to see a point on the yield line or the crossing from point far enough back that he can stop if necessary.

Apron

The Apron, or Overrun Area, is a zone provided **outside** the Centre Island for larger vehicles to track over. The outer limit of the Apron is the offside limit for normal vehicles turning 270 degrees.

Note

In some parts of the world (notably the USA) the apron is considered to be a part of the island, in others (notably the UK) it is considered to fall between the island and the main circulation area. In Junctions the apron is considered to fall outside the central island, i.e. the apron diameter may never be smaller than the island radius.

Apron Diameter

The diameter of the Apron, or overrun, area. The apron diameter is never smaller than the centre island diameter.

Apron Width

The Apron Width is the difference between the radius of the Apron that of the Centre Island. It may never be less than zero.

Arm

A road that connects to a junction. Known in some parts of the world as a leg.

AutoDrive

A means of driving the vehicle in which the path from a given position is calculated automatically as you move a target point (the cursor).

Authorisation code

A code needed to update the hardware lock to run each new version. May also be needed when you purchase extra features.

Axle Spacing

The distance between adjacent axles in a multi-axle group at the front or rear of a component.

Backward Visibility on Entry

Visibility to the right on entry to a roundabout when driving on the left or to the left on entry to a roundabout when driving on the right.

Baseline

The baseline is the line that passes along the back of a row of parking bays.

Bay markings

The bay markings include the painted lines, symbols and hatching used to delineate the preferred position of the car.

Bay style

Each different composition of markings, safety zones, symbols and parking accessories is call a bay style.

Bay symbol

Bay symbols are the graphics painted within the bay and used to indicate, for example, bay usage.

Bend island

Bend islands are placed where a row of parking bays changes direction.

Blend Point

The point on a junction arm alignment at which it joins, or blends with, the existing road.

Castor Steering

Wheels that are part of a fixed axle group but that are free to rotate. Sometimes referred to as self-steered wheels.

Cats Whiskers

See [Predictive Turning](#).

Centre Island (or simply Island)

The non-traversable island at the centre of a roundabout which is the normal offside limit for vehicles turning 270 degrees.

Note

Some parts of the world (notably the USA) consider the centre island to include an overrun area for large trucks. Junctions regards this overrun area as falling outside the centre island.

Centreline Offset

The perpendicular distance between the tangent to the arm alignment at the ICD and the centre of the island. The offset is positive if the tangent passes the centre of the island on the opposite side to the entry road. Thus, in general, the larger the centreline offset the larger the entry deflection, and vice versa.

Circulatory Carriageway Median

The path of a vehicle travelling midway between the inscribed circle and the centre island.

Circulatory Width

The Inscribed Circle radius minus the Island radius.

Note: The preferred physical vehicle path limit will typically be inside this.

Conflict Angle

See [Entry Angle](#).

Cramp Angle

A term (seemingly used only by US fire departments) for the maximum wheel angle. See also [Wheel Cut](#).

Crossing Visibility on Approach

To be added.

Crossing Visibility on Next Exit

To be added.

Cut-in Point

The point at which the spine of the element is tangential to the arc that it transcribes.

Cut-in Radius

The radius of the arc traversed by the Cut-in Point.

Definition Line

A virtual line representing a roadway limit. The physical Kerb Line may or may not coincide with this line.

Dongle

Slang name for a Hardware Lock.

Drag Lines

Lines drawn from the grips used to extend the path to the front most and rearmost grips on the vehicle. These lines vary in length according to the vehicle size and can be switched off.

Drawbar

A rigid towing bar attached rigidly to an axle. The bar and axle turn as one unit.

Drawbar Articulation Angle

The angle subtended at the axle pivot of a drawbar by the drawbar and associated trailer spine.

Drawbar Length

The length of a drawbar is measured from the centre of turning of the relevant axle group to the physical end of the drawbar. The coupling at the remote end must be defined separately in AutoTrack.

DXF File

DXF stands for Drawing Exchange Format, a text file format used to transfer data between dissimilar CAD systems. Supported by many CAD systems.

Dynamic Edit

See [Dynamic Editing](#).

Dynamic Editing

Editing a path by dragging the grips at target points (and / or intermediate points) to new locations. The path updates automatically when the grip is dropped.

Effective Fixed Axle

The effective fixed axle is the single axle that would have the same effect on the vehicle swept path as the fixed axle group. It is the centroid of the

group after the effects of retracted and self-steered axles are taken into account.

Effective Front Axle Offset

The offset of the effective front axle from the reference datum. Positive if the effective axle position is behind the reference datum.

Effective Front Track Width

The distance between outer faces of the front wheels to be used in path calculations.

Effective Rear Axle Offset

The offset of the effective rear axle from the reference datum. Positive if the effective axle position is behind the reference datum.

Effective Rear Track Width

The distance between outer faces of the rear wheels to be used in path calculations.

Effective Steered Axle

The effective steered axle offset is the single axle that would have the same effect on the vehicle swept path as a given steered axle group. It is the outermost axle of the steered axle group, i.e. the furthest forward on a front axle group and the furthest back on a rear axle group.

Effective Wheelbase

The distance between the Effective Front and Rear Axles.

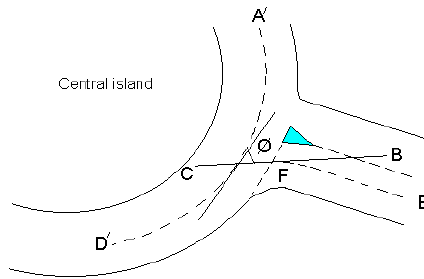
End island

End islands are non-parking areas placed at the ends of rows of parking bays.

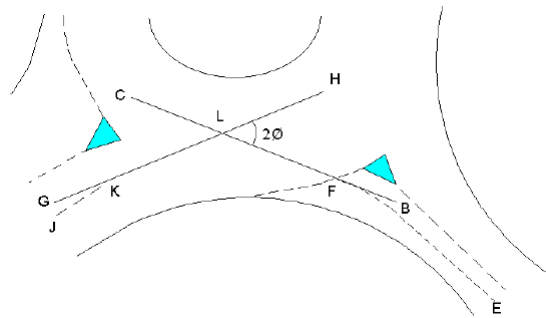
Entry Angle

The entry angle or conflict angle, Φ (phi), is a geometric proxy for the angle between entering and circulating streams. It is calculated in one of two ways depending upon whether the entry and exit tangents intersect with respect to the median circulation path.

When the entry and exit tangents intersect 'inside' the circulatory carriageway median, the entry angle is the angle between the entry tangent and the tangent to the circulatory carriageway median at the intersection point.



When the entry and exit tangents intersect 'outside' the circulatory carriageway median, the entry angle is half the angle between the entry and exit tangents.



Entry Deflection

The extent to which a vehicle must deviate from a straight line path to negotiate the entry to the roundabout.

Entry Path Radius

The radius of the fastest vehicle path at, or close to, the entry yield line.

Entry Tangent

The tangent to the path of an entering vehicle at the intersection of the entry path and the yield line.

Exit Tangent

The tangent to the path of an exiting vehicle at the intersection of the exit path and the ICD.

Envelope

A single line representing the maximum body or wheel movement. In the case of vehicle bodies it is the outer limit of movement of any point on any body. In the case of wheels it is the outer limit of travel of any wheel.

Exit Overturn

An exit overturn is when a vehicle continues past the point at which it would normally start the turn (i.e. delays the start of the turn) prior to turning back and exiting the turn. The lateral deviation from the normal path is the exit overturn distance.

Fastest Line

The Fastest Line is the centreline of the path taken by a vehicle travelling as fast as possible through the junction. It is defined by various standards in different ways but usually there is a minimum offset from the apex of the path at entry, exit and island. There are also often specified starting and ending positions.

Fifth Wheel

A horseshoe shaped coupling device on a tractor that connects to a pin on a semi-trailer called a kinpin.

Flare Lane

An extra lane added at the entry to a roundabout used to manage vehicle movements.

Follow

A means of driving a vehicle in which you specify a required path as a polyline and let the vehicle attempt to follow it.

Forward Circulatory Visibility

Visibility around the circulation area.

Forward Fastest Path Visibility

Visibility from an entering vehicle on the fastest path to the conflict point on the fastest entry path from the next arm.

Forward Visibility on Entry

Visibility to the left on entry to a roundabout when driving on the left or to the right on entry to a roundabout when driving on the right.

Grips

Small squares that appear when an object is selected. Grips can be selected and moved using the mouse.

Hairpin marking

A type of parking bay marking comprising twin sidelines connected at the entrance.

Hardware Lock

A hardware lock or dongle is a security device that must be plugged into the parallel port of your computer to allow AutoTrack 5 to run.

Head up display

A display of data that the user can see without diverting his or her gaze from the task in hand.

HUD

See [Head up display](#).

In bay numbering

In bay numbering is when bay numbers are placed within each marked parking bay.

Independent Bogies

Multiple linked bogies arranged along a unit each with their own turntable. Also known as Tandem Axles. See also Pendel Axles.

Inscribed Circle

The Definition Line representing the outer limit of the Circulatory Width.

Intermediate Grips

Transient editing grips that are displayed along the path between Target Points to make path editing easier. An Intermediate Grip becomes a Target Point if it is selected.

Intersection Sight Distance

Visibility to traffic entering from the previous arm and/or traffic already circulating.

Kerb Line

A line representing the roadside edge of the physical kerb.

Kerb Offset

The distance that the Kerb Line is offset (outside) the Definition Line.

Kerbside numbering

Kerbside numbering is when the bay numbers are placed adjacent to the bay.

Kerb-to-Kerb Turning Circle Radius

The radius of the smallest circle within which the vehicle's wheels can turn. It is assumed that this occurs when full steering lock is applied.

Kingpin

A pin on a semi-trailer that connects to a horseshoe shaped coupling device on a tractor called a fifth wheel.

Lane Line

A line between lanes of traffic travelling in the same direction.

Layer

A means of grouping objects together within an AutoCAD drawing. The properties of layers (e.g. visibility) may be controlled independently of the objects they include. See also Level, the equivalent in MicroStation.

Level

A means of grouping objects together within a MicroStation drawing. The properties of layers (e.g. visibility) may be controlled independently of the objects they include. See also Layer, the equivalent in AutoCAD.

Linkage Proportion

The linkage proportion is the proportion of the articulation or wheel angle at one end of a unit that is applied to the axle group at the other end. The proportion may be specified in terms of angles or tangents of angles. In arithmetic terms if the linkage is on an angular basis the linkage proportion would be:-

$$\text{LinkageProportion} = \text{LinkedAngle} / \text{PrimaryAngle}$$

If the linkage is on a tangential basis the linkage proportion would be:-

$$\text{LinkageProportion} = \tan(\text{LinkedAngle}) / \tan(\text{PrimaryAngle})$$

We understand that the latter is the more common form of linkage and in this case the effective cut in point offset is fixed for all primary angles.

Loci

The plural of locus. See [Locus](#).

Lock

Steering angle; thus, maximum left lock is the maximum steering possible when turning left and right lock is the maximum when turning right.

Lock to lock time

Lock-to-lock time is the time that it takes the driver of the vehicle to turn the steering from the maximum angle (full lock) in one direction to maximum angle (full lock) in the opposite direction in a single continuous movement.

Locus

The path of a moving point in space. In the context of AutoTrack the path of the wheel tracks or the body vertices. Referred to in AutoTrack in it's plural form loci.

Manual Drive

A means of driving a vehicle that uses a control overlay displayed on screen. The vehicle moves forwards, reverse, left and right according to the position of the cursor on the control overlay.

Maximum Drawbar Articulation Angle

The largest Drawbar Articulation Angle permitted.

Maximum Wheel Angle

The maximum angle of any wheel in a group, i.e. at the front or at the rear. This is normally the inside wheel on the innermost axle but may be otherwise if the widths of the axles in the group vary. See also 'Cramp Angle' and 'Wheel Cut'.

Minimum Cut-in Radius

The radius of the arc traversed by the Cut-in Point when the vehicle is turning at the Maximum Steering Angle.

Model Settings

The criteria that control the how a specified vehicle should behave in a specific situation. For example, a lower limit might be placed on the allowable lock rate.

Nearside

The side closest to the passenger in a standard passenger car designed for the region.

Object enabler

An AutoCAD add-on that allows third party entities, like AutoTrack path entities, to be regenerated but not edited.

Offset Envelope

The envelope of maximum body or wheel movement with a further margin added. This may represent a safety or clearance margin.

Offside

The side closest to the driver in a standard passenger car designed for the region.

Overrun Area

See [Approach Stopping Sight Distance](#)

[The required line of sight on approaching a roundabout. The approaching driver must be able to see a point on the yield line or the crossing from point far enough back that he can stop if necessary.](#)

[Apron.](#)

Overturn

A technique for reducing the vehicle cut-in on corners whereby the vehicle either turns temporarily in the opposite direction (side overturn) or delays the exit from the turn (exit overturn).

Overturn angle

When performing an overturn (side or exit) the overturn angle is the angular deviation of the wheels from the path the same vehicle would take if performing a non-overturn manoeuvre.

Pendel Axles

Multiple linked bogies arranged both across and along a unit that turn in much the same manner as Ackerman axles, i.e. those axles furthest away from the centre of turn follow the widest radius arc.

Predictive Turning

Predictive Turning is an AutoDrive feature that displays the limits of the vehicle path **from** the last position placed and the limits of body or wheel envelope **from** the ghosted unselected position. Also known as “Cat’s Whiskers”.

Primary Axle

The innermost axle of a group, i.e. the rearmost axle of a front axle group and the front most axle on a rear axle group.

Privacy post

Privacy posts are used to prevent use of parking bays by unauthorized personnel.

Profile

A profile is an AutoTrack object that lets you display a side or plan view of a vehicle complete with dimensions.

Profile View

A profile view is an AutoCAD Civil 3D object that lets you display ground profiles as graphed lines on a grid. For more details please refer to the AutoCAD documentation.

Rail wheels

Wheels designed to run on rails typically with an inner flange to prevent the wheel from derailing.

Retracted Axle

An axle that is present but not in contact with the road surface. Retracted axles are ignored when AutoTrack calculates the effective axle positions.

Safety post

Safety posts may be placed at the ends of parking bays to prevent vehicles from overshooting.

Safety zone

Safety zones are areas of extra space provided to meet special requirements and are measured from the centres of the bay side and entrance lines.

Script

A means of driving a vehicle by issuing commands such as; forwards 10 metres, turn left 30 degrees, continue for 5 metres.

Secondary steering

A turning axle group whose angle is controllable but which is not the main steering for the vehicle. The axle may be linked to another axle or independently controllable.

Secondary steering angle

The angle of an imaginary wheel at the centre of a secondary steering axle. See [Secondary steering](#).

Self-steering

Wheels that are part of a fixed axle group but that are free to rotate. Sometimes referred to as castors.

Separator Line

A line between lanes of traffic travelling in opposite directions.

Service type

The different usages of parking areas are called service types.

Side Overturn

A side overturn is when a vehicle starts a turn with opposite lock for a short distance prior to making the turn. The lateral deviation from the normal path is the side overturn distance.

Splitter

The splitter is formed by the boundaries of the entry and exit roadway Definition Lines and the Inscribed Circle.

Splitter Island

The Splitter may include a Splitter Island, especially if there are pedestrian crossings. The physical limits of the Splitter Island are normally inside the Splitter.

Steering Angle

The angle of an imaginary wheel at the centre of the controlling axle or coupling.

Stub axle

An axle carrying wheel(s) at only one end.

Stub axle length

The length of a stub axle is measured from the pivot point to the centre of the wheel group.

T-markings

A type of parking bay marking consisting of a T painted at the entrance between each adjacent parking bay . The leg of the T runs a short distance down the side of the bay and the cross runs part way along the entrance line.

Tandem Axles

See [Independent Bogies](#).

Target Point

A point through which the vehicle must travel.

Tracking Point

The Tracking Point is the point on the vehicle that must pass through the specified Target Points. It is the point on the vehicle that you move and position when you use AutoDrive and also the point that follows the line in the Follow drive mode.

Tyred Wheels

Wheels with tyres fitted.

Vehicle class

Vehicles using parking areas are grouped into classes; vehicles with similar parking requirements.

Wall-to-Wall Turning Circle Radius

The radius of the smallest circle within which the vehicle's body can turn. It is assumed that this occurs when full steering lock is applied.

Wheel Cut

A term (seemingly used only by US fire departments) for the maximum wheel angle. See also [Conflict Angle](#)

[See Entry Angle.](#)

[Cramp Angle.](#)

Wheel Diameter

The diameter of the outer face of the tyre.

Wheel stop

Wheel stops are placed at the ends of bays to prevent the vehicle from overshooting.

Wheel Track

The distance between the outer faces of the wheels on an axle.

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